

MOTOR AGE

Vol. V No. 1

JANUARY 7, 1904

Ten Cents

WINTON

AN automobile's vital points are Transmission, Ignition and Lubrication. Weakness therein is ruinous. The Winton's Transmission, Ignition and Lubrication systems are absolutely without equal.

The Winton Touring Car completely equipped sells at \$2500. Automobile experts wonder how we can afford to sell so splendid a product at so low a price.

THE WINTON MOTOR CARRIAGE CO.

Member Association Licensed Automobile Manufacturers.

FACTORY AND GENERAL OFFICES:

CLEVELAND, OHIO, U. S. A.

Chicago

New York

Boston

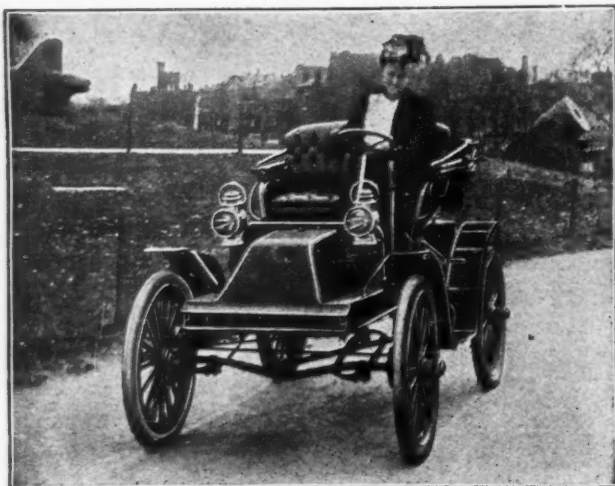
Philadelphia

NEW YORK
SHOW

Spaces 90 & 92



✓ AR v.51 Jan. - March 1904



Miss Susanna Cocroft, a Prominent Instructor in Physical Culture, Operating a Haynes-Apperson Runabout in Lincoln Park, Chicago.

A Steering Wheel

that can be placed in any position convenient to the operator, or shoved clear out of the way instantly, at rest or in motion, is found only in the

Haynes-Apperson Automobile

Our catalogue gives the records complete. Inquirers are urged to visit our factory, where every detail of Haynes-Apperson superiority can be seen and fully understood.

HAYNES-APPERSON CO., Kokomo, Ind., U. S. A.

The Oldest Makers of Motor Cars in America.

Member of the Association of Licensed Automobile Manufacturers.

Branch Store, 1420 Michigan Avenue, Chicago.

Eastern Representatives: Brooklyn Automobile Co., 1239-41-43 Fulton St., Brooklyn, N. Y., and 66 West 43d St., New York;
John Maxwell, Oneida, N. Y., Agent for Central New York.
National Automobile & Mfg. Co., Pacific Coast Agents, San Francisco

See our exhibit at New York Show, January 14 to 24. Chicago Show, February 4 to 14.

This is one of our new series of daily paper advertisements which will surely enormously increase the sale of

KNOX 1904 CARS

HAVE YOU ORDERED YOURS YET?

PRINCIPAL AGENCIES:

New York, Knox Automobile Co., 152 W. 38th St.
Boston, The Reed-Underhill Co., 41 Stanhope St.
San Francisco, National Auto. & Mfrs. Co., 134-146 Golden Gate Ave.
Philadelphia, Knox Automobile Co., 16th and Wood Sts.
Chicago, Reineman, 315 Frick Bldg.
Detroit, Motor Vehicle Co., 112 S. Sixth St.
Newark, New Jersey, Edward Newton.
Cleveland, Automobile Co., 79-83 Mathewson St.
Pittsburgh, Miner, 304 Allyn St.
New York City, Shop, 450 Broadway.
St. Louis, Billings.
Chicago, Ley Auto. Co., 2935 Olive St.
New York City, on's Auto Station No. 1, Court Place.
Milwaukee, Wis., Geo. A. Crane, 187 Wisconsin St.
Louisville, Sutcliffe & Co., 1051 Third St.
Brooklyn, N. Y., A. R. Townsend, 1148 Bedford Ave.
New Haven, Conn., C. H. Torrey, 751 Chapel St.
Baltimore, Md., Maryland Automobile Co., 24 E. 21st St.
Columbus, Ohio, Oscar Lear Co., 201 S. High St.
Indianapolis, Ind., Indiana Auto. Co., Monument Place.
Lowell, Mass., W. H. Greene, 91 Appleton St.
Troy, N. Y., James Lucey, 359 Fulton St.
Grand Rapids, Mich., Adams & Hart, 12 W. Bridge St.
Bridgeport, Conn., W. S. Brandegee, 615 State St.
Chicago, Ill., (will give name and address later).
Portland, Me., H. J. Willard, 28 E. Promenade.

NEW YORK EXHIBIT, 61-62-63 Madison Square Garden

KNOX AUTOMOBILE CO., Springfield, Massachusetts

K
♦



WATERLESS GASOLINE CARS

are the diamonds of the automobile world. They are known value and the most valuable known. They are brilliant as diamonds in service and always at par, easy to operate, and wear like diamonds. Examine the Knox patent air-cooling system. The only high power engine cooled by air. The ideal winter machine. You can save repairs by using the Knox. They have every tested modern improvement.

TONNEAUS, SURREYS, and RUNABOUTS
Six Styles Passenger Cars and Six Styles Commercial Cars to Choose From
Send for catalogue
Knox Automobile Company, Springfield, Mass.
Member Association of Licensed Automobile Manufacturers

♦
X

MOTOR AGE

VOL. V. NO. 1.

JANUARY 7, 1904.

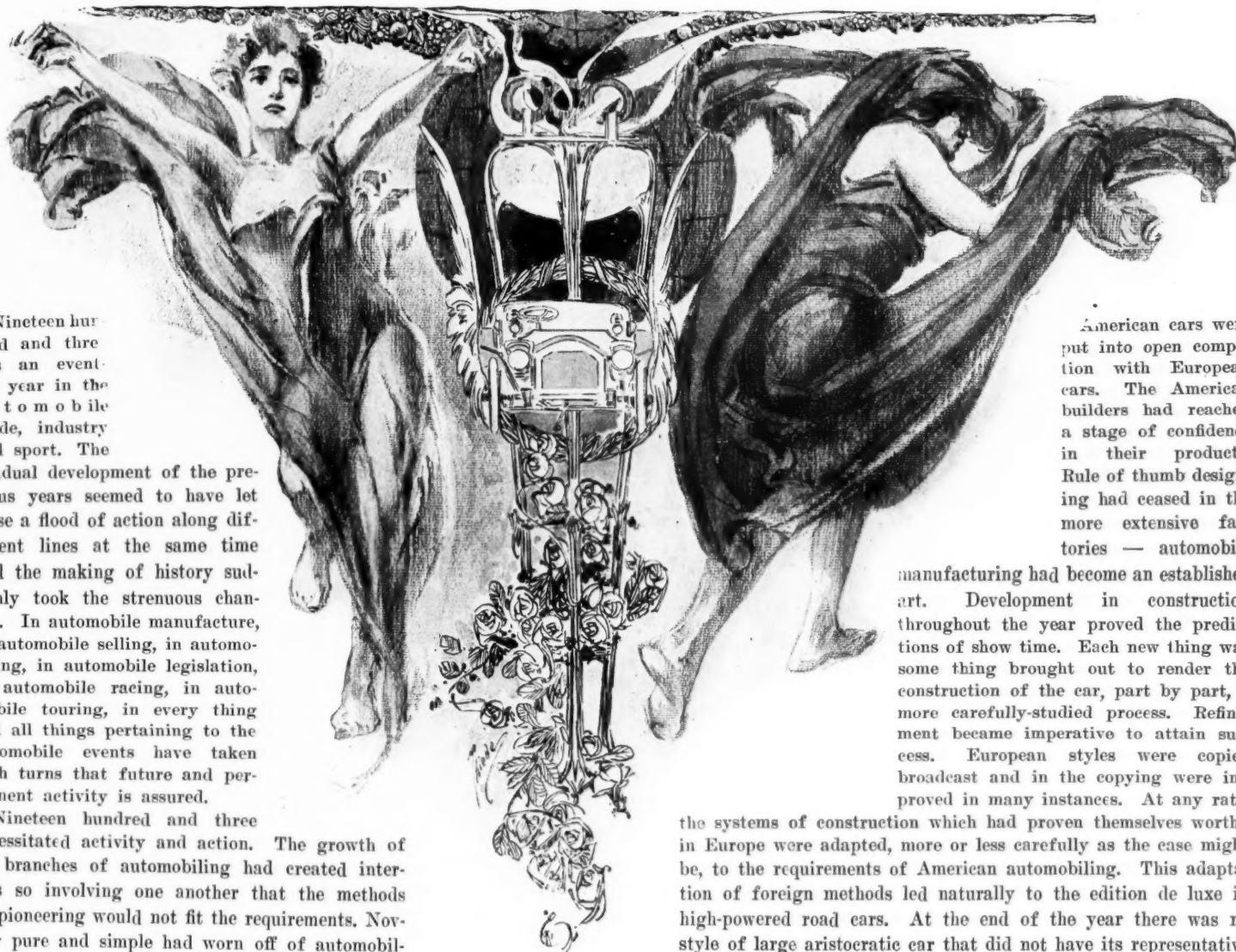
\$2.00 Per Year.

A YEAR'S ACHIEVEMENT—A YEAR'S PROMISE

Nineteen hundred and three was an eventful year in the automobile trade, industry and sport. The gradual development of the previous years seemed to have let loose a flood of action along different lines at the same time and the making of history suddenly took the strenuous channel. In automobile manufacture, in automobile selling, in automobiling, in automobile legislation, in automobile racing, in automobile touring, in every thing and all things pertaining to the automobile events have taken such turns that future and permanent activity is assured.

Nineteen hundred and three necessitated activity and action. The growth of all branches of automobiling had created interests so involving one another that the methods of pioneering would not fit the requirements. Novelty pure and simple had worn off of automobiling. It had become so widespread that definite action was forced to succeed resolution and planning. Automobiling had arrived.

Automobiles were rebuilt for 1903. The shows of last January and February partly conveyed this fact. The shaftless carriage had been passed and the day of the motor car and individually characterized creation had come. The crude principles of construction had reached a stage of development at which form and method might be taken more carefully into consideration and the production of automobiles in commercially large lots became a fact. Runabouts were supplemented by all manner of heavy cars and small and heavy cars took on a style and finished appearance never before possessed. General tendencies in construction spread like wild fire; a few general classes of cars sprang up to succeed the straggling host of freaks.



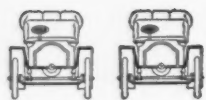
American cars were put into open competition with European cars. The American builders had reached a stage of confidence in their products. Rule of thumb designing had ceased in the more extensive factories — automobile

manufacturing had become an established art. Development in construction throughout the year proved the predictions of show time. Each new thing was some thing brought out to render the construction of the car, part by part, a more carefully-studied process. Refinement became imperative to attain success. European styles were copied broadcast and in the copying were improved in many instances. At any rate,

the systems of construction which had proven themselves worthy in Europe were adapted, more or less carefully as the case might be, to the requirements of American automobiling. This adaptation of foreign methods led naturally to the edition de luxe in high-powered road cars. At the end of the year there was no style of large aristocratic car that did not have its representative of American manufacture. As power was raised and elegance succeeded plainness in design and finish, weights were cut down and the strong light car was created. Small cars became heavier, but large cars became lighter. In each class makers sought to establish a certain factor of power with a certain factor of safety and comfort.

Nineteen hundred and three was the first year of business vehicles in more than experimental use. Builders who had never before paid attention to this one of the greatest of all branches of automobile building found it possible to adapt their systems of construction to the commercial car. No wonderful business was done in this line. Enough business was done to show that the venture was entirely practical.

Nineteen hundred and three spread automobile agencies, branches, etc., into every city in the United States. Directly or indirectly buying dealers sprang up in localities into which previously automobiles had



come only as the purchases of pioneers who had traveled far to get them or who had ordered by mail. Even in cities and towns of moderate size, large, well equipped stores and garages were established. Automobile selling became just as much a part of a community's business as carriage selling.

Nineteen hundred and three settled the show question on a satisfactory basis. It furnished two great national shows, each taxing the capacity of their respective places of holding and several highly prosperous local shows in smaller trade centers, these shows arranged in most cases by the dealers whose lines were exhibited.

Nineteen hundred and three saw the formation of dealers' associations in all of the large trade centers. Some of these associations quickly assumed roles of usefulness; others, unfortunately, drooped somewhat after the first enthusiasm had gone.

Nineteen hundred and three divided the manufacturing trade. The Association of Licensed Automobile Manufacturers was formed, with the avowed purpose of restricting the manufacture of gasoline automobiles to the ranks of licensees under the Selden patent. The year went out with infringement suits brought against an unlicensed maker, a dealer in unlicensed cars, and an importer of unlicensed cars; 1904 will determine the validity of the patent and the strength of the A. L. A. M.

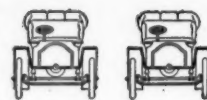
In the affairs of automobiling generally, 1903 furnished more legislative debate and action than had marked all previous time. State and municipal authorities and automobilists sought, each by their peculiar light, to solve the numerous questions arising from the intermingling of automobiles with other means of transportation upon the common highways. It is probable that nothing final in legislation was accomplished. But the uselessness of restrictive laws was shown on the one side and the worthlessness of too great an independence upon the other. It may be said that during 1903 all sides to the question sought a common ground upon which to co-operate.

Nineteen hundred and three developed the automobile club into a useful body. In many cities old or new clubs took active part in local work or strengthened their organizations for future work. But in national organization the year marked greater efforts than in local clubdom. The American Automobile Association, formed a year previously as a union of clubs, found that individual membership was necessary to its permanent success. It amended its constitution to that effect and started on again along somewhat new lines to build up a great national organization. In the business of attaining a great body of members the American Motor League started ahead of it and during the year worked hard and still harder to increase its membership. With membership it could become a strong factor in automobiling; without membership it was nothing. So the work for membership was carried on so vigorously that it stimulated the A. A. A. to renewed efforts and the dying year beheld the two organizations, rivals in spirit if not by public expression of sentiment. The A. A. A. controls racing; it seeks greater membership and a greater field of influence. The A. M. L. has the greater membership, is working along the lines of touring and other phases of general automobiling.

Nineteen hundred and three had its touch of humor here and there also. Chauffeurs' unions were organized in New York and Chicago and the "boys" promised all sorts of reforms of benefit to themselves and to automobilists.

Nineteen hundred and three established long distance touring as one of

the most attractive forms of automobiling. Extensive club tours, tours of individuals over all sections of the country, tours to the arctic circle and the crossing of the continent by three automobile parties, and by a motor bicyclist demonstrated the fitness of American cars for rough, hard work.



In formal tests of automobiles there were two national ones during the year—the business vehicle test conducted by the Automobile Club of America and the New York-Pittsburg endurance test, conducted by the National Association of Automobile Manufacturers. Only eleven cars took part in the former, owing to the fact that the N. A. A. M. had refused to recommend participation in it because of the belief that the time was not right for such an affair. It was successful, however, so far as it went, and seven of the starting cars completed the tasks set for them in good shape. The endurance run was most peculiar of all tests of automobiling. Preparations were made for a particularly careful test of the cars under ordinary touring conditions, and then the heavens opened and sent down the greatest downpour of water in the history of New York state. The run became a struggle through a flood, in which thirty-one automobiles fought to win where trains and all other means of transport failed. Twenty-five succeeded and rounded up at Pittsburg, mud covered but little injured by the hardship. It was a crucial point in motor car testing and motor cars were not found wanting.

In automobile sport, track racing was popularized in two scores of cities and half that number of places saw the purely racing automobile in close and exciting competition. Fully 250,000 persons witnessed motor car track racing and two-thirds of this number saw the kind of class A racing which for the season was run at an average speed rate of 1:03 to the mile, 57 miles an hour. The mile track record was broken six times during the summer and finally placed at 54½ seconds.

In racing 1903 also saw the overgrowth of road racing, its development to a point where it became an abnormal and dangerous sport, which in its unrestricted form was brought to a finality in the interdicted Paris-Madrid race. But it also saw the development of the limited road race to a point of international consequence in the realm of general news, the Gordon Bennett cup race in Ireland being the center of the world's eyes last July.

Straightaway racing also secured a hold in America. Courses near or in large cities being practically out of the question, little straightaway racing had ever marked the sport in this country. The discovery of the suitable qualities of the Ormond-Daytona beach, in Florida, for such contests resulted in the inauguration of annual speed contests. Preparations are already being made for a series of contests to occur between the New York and Chicago shows and it is probable that world's records will go glimmering.

Taken as a whole the year was a healthy, lively, active one. It spread every branch of automobiling wonderfully and built up the trade to a point where it is prepared to build \$33,155,000 worth of automobiles in a twelvemonth. For a conservative estimate of the probable output of the different factories which will actually place cars on the market during 1904 gives a total of production of 30,000 cars. This production would be divided roughly as follows: Licensed gasoline cars, 16,000; unlicensed gasoline cars, 8,000; electric cars, 3,000; steam cars, 2,000; miscellaneous, 1,000.

MOTOR AGE—LAST YEAR; THIS YEAR

MOTOR AGE has no radical policy for 1904. It has no change of platform; no great difference in method of procedure to offer. It will make a change here and there as the desirability of that change becomes evident; an improvement whenever that improvement is possible. It expects that before the year is over many changes and many improvements will have been made. All will be made with one definite purpose—to make MOTOR AGE a better paper for the reader of it and hence a better advertising medium for the trade.

There are certain limitations to the publication of a weekly paper which combines news with special articles. These limitations are mechanical and natural. They tend toward one or both of two things—delay in publication or inferior work. MOTOR AGE is making every effort to overreach these limits, and it hopes that during 1904 each issue will mark a step toward the acme in the production of a weekly paper of monthly magazine grade.

During 1903 the ordinary limits of production were exceeded in several instances—notably in the cases of the Gordon Bennett cup race and the endurance run—and in rushing the publication of news, the typographical appearance of the paper was kept of even quality with that of other issues. There



was no dumping of matter into odd corners, nor excruciating display in the manner of an afternoon extra. The paper was a unit, with each part related to the others exactly as though there had been no hurry in the publication of the most important news feature.

That such work has been done leads to the conclusion that it can be done to even a greater extent. By this it is not meant that MOTOR AGE will make it the primary aim to take advantage of every opportunity for a "scoop" simply to prove itself enterprising. The intention is, however, to so take advantage of every hour in the mechanical part of the paper's production that the most artistically printed paper that can be printed and issued weekly and still contain live news will be the result.

Editorially the subject of policy and improvements broadens, for it takes in the preparation and presentation of special articles, as well as of news. Greater care than ever before is being taken in the preparation of such articles, whether they be of a popular or of a mechanical nature. Like all of the news matter, these will be written for the reader, not solely for the man or thing written about.

MOTOR AGE has established the policy of rigidly sepa-



rating its advertising pages from its reading pages. It offers its advertising pages for sale at what is deemed a fair price—their market value. It asks no premium and will take no less. Its reading pages are its own, and their contents is not governed by any advertising contract. If a new vehicle is described, this is done because the reader of the paper wishes to read this description. He wants to understand the construction of the car. Perhaps advertising value results to the maker, but the publication of the description is not primarily to give him extra advertising as a premium on that purchased. This policy will be rigidly maintained and every reader of MOTOR AGE may be sure that every line of the reading pages in MOTOR AGE is conscientiously written.

In many cases MOTOR AGE will go to considerable expense to prepare descriptions of cars or other articles of product of the trade. This is not charged to the maker, in fact or in spirit. It represents one of the legitimate expenses of publishing matter, to read which the subscriber is asked to pay a certain price. MOTOR AGE asks only of the trade that it co-operate with it in obtaining the material for such articles. It has found that the makers have come to appreciate the superiority of this method of honest publication of interesting fact over the old style trade journalism in which the exaggerated "jolly" and the so-called "write-up" predominated.

MOTOR AGE intends to proceed to the best of its own knowledge of the business, as a straightforward, honest automobile paper, full of high grade reading matter for all classes of persons interested in the automobile trade, sport and pastime. What others may do will not affect its course. If others imitate, let them. If others excel—well, MOTOR AGE has hung the old printing office sign "We never sleep," over the door of its every department.

MOTOR AGE has during the past year studied every feature of the business closely. It has watched for its own mistakes and has found them. It is profiting by its own experience. Its own growth shows this. It has studied the experience of others and profited thereby. It believes its general method of class paper publication is correct. It seeks continually to improve each specific element in its make-up. Each department is being made a study.

Specifically MOTOR AGE, during 1904, among other things will:

Weigh carefully the value of everything that goes into the paper.

Seek to improve the illustration in every respect—mechanical drawings, general illustrations, decorative drawings and half-tone illustrations of mechanical subjects.

Aim to get the best stories about important news happenings and to place an honest news value upon all news.

Publish more, better and more nearly complete descriptions of new cars, etc.

Increase the utility of its department for correspondents.

Make all other departments of a mechanical nature interesting, but accurate in the matter presented—in the endeavor to combine technical truth with plain, simple descriptive language comprehensible to all classes of readers.

Maintain strictly up-to-date and artistic advertisement composition.

Use absolutely the best paper that can be made for rapid printing and binding.

Accomplish absolutely the best printing that can be done in the time at command.

Extend its influence as much as possible. The subscription list of MOTOR AGE is growing wonderfully. It will continue to grow. There is no fake about it. There needs to be none. People on all sides are glad to subscribe for MOTOR AGE. MOTOR AGE simply keeps after them through personal solicitation and by correspondence. Doing this and publishing a paper worthy of subscription is the easiest way to maintain an extensive circulation. It can be done temporarily with a lead pencil; but there is no continued profit in it.

Conclusively MOTOR AGE is doing all it knows how to do to establish itself as pre-eminently leader in its field. It has no side enterprises tacked onto its affairs. It represents a business with a single purpose—that purpose to excel in automobile paperdom. It is not ashamed of what it has accomplished during 1903, but intends to do more during 1904.

THE SUCCESSFUL AUTOMOBILE AGENT

Being human, automobile agents do not differ greatly from the average run of mankind, and since the automobile agency reflects the agent and his peculiarities it is well to deal with the agent himself, notwithstanding that the point is agencies. In the early days of its career, the Winton Motor Carriage Co. advertised "no agents."

Behind this announcement no prejudice lurked. Rather it was merely an indication of the period, for at that time automobile agents, such as we now know, did not exist. Applications for agencies were plentiful, but the automobile knowledge behind the applications was slight and the Winton Motor Carriage Co. as a self protective measure decided to deal directly with purchasers, feeling confident that better results in operation could thereby be secured. Experience proved the wisdom of that course.

But as this first policy reflected the era of its enforcement, so the change in time brought about a change in policy; and for several years this company has not only not advertised "no agents," but has accepted agency propositions and has endeavored to the limit of its capacity to make the agent successful in his business. The company's aim, however, has not been to appoint many agents so much as to secure good agents. The sale of automobiles is a business of peculiar character, to which an incalculable injury could readily be done by a poorly equipped and indifferent agent.

The good automobile agent should be not only a good business man in the generally accepted sense of that term but also a student of human nature. The automobile is a mechanical product which, being unable to think for itself, must have someone to think for it. The conclusion readily follows that its conduct in the hands of everybody will not be identical. The variety of its conduct will depend upon the variety of handling it receives; and if the operator is thoughtless enough to mishandle the car in a way that brings him trouble, he is equally liable to blame it all on the car and excuse himself without admonition. Such persons are not few. Every agent encounters them to a greater or less extent. And, unless the agent understands human nature, makes allowances, and gently leads the operator into a proper regard for his car, the operator either consigns automobiles generally or does business with an agent who extends to him the very aid he needs.

In "The Letters of a Self-Made Merchant to his Son," John Graham said: "What we want is orders. Then more orders, etc." What every automobile manufacturer wants is orders and more orders. The successful agent is the one who gets them. He must therefore be enterpris-

By CHARLES B. SHANKS



ing. If he waits for orders to come to him he may be successful for a period, but his day of success is certain to be short. The automobile industry is developing agents who go after the business and these eventually will outdo the men who wait.

Automobiles are usually sold to men of money. Men of money are usually men of more than average intelligence, appearance and taste. The agent must appeal to them. Consequently he should size up to such men's estimates of the successful business man. An agent who can converse intelligently on the events of the day, dress prosperously and be gentlemanly in his conduct, will do the greater volume of business, other things being equal, than the agent deficient in these qualities. And it can even be said that the agent having these qualities stands a better chance of victory selling a car of less merit than does one ignorant, careless and coarse, though he have the better car to sell. After all, the personal influence wields a tremendous influence and doubtless always will.

It is less necessary that an agent know the shortcomings of his competitors' cars than the strong points of his own. Every knock is a boost. The intelligent caller seeks to know what the agent has to sell and why it is worth the buying. Let the agent drift away from the point, to criticize a competitor's car, and forthwith the caller's mind is sent along a channel not leading to a sale. He will not buy A's car because B's car is bad. Nor will he buy A's car unless A shows wherein it is good. The successful agent therefore talks his own goods only and does so with an intimate knowledge that is at once interesting and convincing.

Much of the agent's success depends upon the co-operation that he receives from the house he represents. A good product well advertised, prompt deliveries and a sturdy business policy on the part of the manufacturer are advantages that no agent can fully appreciate until he has enjoyed them. A selling department that refers inquiries promptly to the agent, that gives him as many selling suggestions as he can possibly use to his advantage, and that lends him the benefit of its buoyant enthusiasm are likewise influences that count for the agent's good.

Our own experiences with automobile dealers leads us daily to higher opinion of their worth. They are as a rule men of sound business sense, enthusiasm, enterprise and character, to whom the lessons of experience are proving beneficial. The business is one that attracts the highest order of men and, being so, it is one that promises better returns in future than thus far have been realized.

The Year 1903



Record breaking show at Madison Square Garden, New York—One hundred and fifty exhibitors; eighty-eight on main floor and in the gallery; thirty-five in the exhibition hall in the basement; seventeen in the restaurant and ten in the first tier boxes.

Manufacturers send a special freight train of exhibits from the New York to the Chicago Show.

Dr. Julian A. Chase, of the Rhode Island Automobile Club, elected president of the American Automobile Association to succeed W. E. Scarritt. Isaac B. Porter, of New York, elected president of the American Motor League.

Entries for places on the American Gordon Bennett international cup race team closed with five entrants, Alexander Winton, Louis P. Mooers, Percy Owen, W. E. Matheson and H. S. Harkness.



One hundred and fifty exhibitors crowd the main hall and annex of the Coliseum during the Chicago automobile show.

Prosperous local shows held at Cleveland and Detroit.

Automobile Club of Great Britain decides upon tri-angular course in Ireland for the running of the Gordon Bennett cup race.

Milton J. Budlong, of the Electric Vehicle Co., elected president of the National Association of Automobile Manufacturers.

The big British automobile show held in the Crystal Palace, London—One hundred and forty exhibitors.

National good roads convention under the joint auspices of the National Association of Automobile Manufacturers, the National Good Roads Association and the Chicago Automobile Club held in the Auditorium, Chicago.



The Daytona-Ormond beach in Florida inaugurated as an annual racing ground, by a successful 3-day speed tournament.

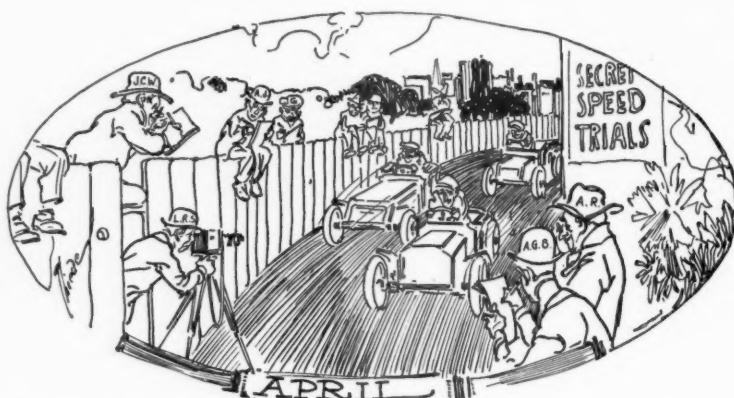
Handsomely set local show held in Horticultural Hall, Philadelphia.

Royalty opens the Berlin, Germany, automobile show with a gorgeous motor car parade.

Symphony Hall, crowded with cars and people during Boston's local show.

National capital completes list of bustling local shows.

New York chauffeurs form a "union," the American Chauffeurs Club.



Percy Owens and Louis P. Mooers selected by the A. C. A. to comprise, with Alexander Winton, the American team in the Gordon Bennett cup race. Preliminary trials almost a fiasco and more or less of a joke because while supposed to be secret were "discovered" by enterprising New York newspaper men.

Count Zborowski, noted sportsman and automobilist, killed in smashup in the La Turbie hill climbing contest, at Nice, France.

Serpollet, with his steam racer, earned chief honors in speed trials at Nice, France.

A Stanley steamer, driven by Frank Durbin, made best time in Boston hill climbing contest.

Pope Mfg. Co. succeeds to all the manufacturing interests of the defunct A. B. C.



Governor Odell of New York signed the Bailey bill and the measure so distasteful to motorists and whose passage almost tore the A. C. A. in two became a law.

American Automobile Association adopts an entire new set of racing rules. Automobile races during carnival week at Los Angeles, Cal., opens the season of sport.

Gabriel wins the Paris-Bordeaux section of the interdicted Paris-Madrid road race—called a holocaust of hades on account of its unfortunate fatalities.

Seven of the eleven starters finish the 2-day business vehicle contest conducted by the Automobile Club of America.

Decoration Day race meets at New York, Boston, Denver and Dayton, O.



American international cup race team sails for Ireland.

Barney Oldfield with the Ford-Cooper racer puts the mile track record under a minute, making a mile in 59 3-5 seconds at Indianapolis.

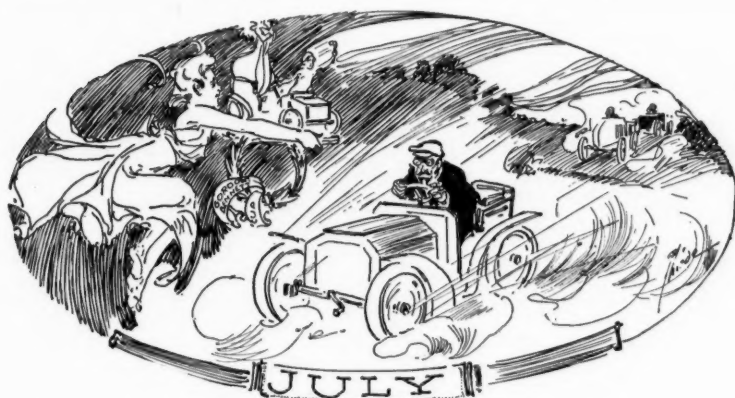
The American Automobile Association amends its constitution to admit individual members.

Chicago dealers organize an association—it was recently advertised for in the lost, strayed or stolen column.

Baron de Crawhez on a Panhard wins the circuit des Ardennes, in Belgium.

The Year 1903

The Year 1903



Jenatzy wins the Gordon Bennett international cup race for Germany on a Mercedes—The three members of the French team, De Knyff, Farman and Gabriel, finished respectively second, third and fourth.

Thirty-two started and sixteen finished the 400-mile endurance test of the New York Motor Cycle Club.

G. A. Wyman reaches New York in good shape after having crossed the continent on a motor bicycle.

Records galore broken at second New York race meet at Empire City Trotting Club track.

Dr. H. Nelson Jackson finishes his San Francisco-New York transcontinental trip in a Winton car.

The Association of Licensed Automobile Manufacturers formally announces its intention of forcing recognition of the Selden patent.



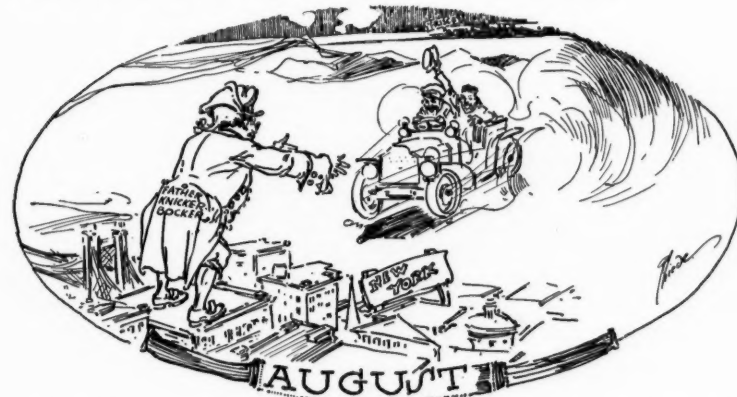
The New York-Fittsburg endurance test was run through the greatest flood in the history of New York state and twenty-five of the thirty-one starters reached Pittsburg in good shape and by the specified time; nine of these having made every control on time—MOTOR AGE was the only automobile paper to publish the story of the finish the week of the run.

Third successful race meet of the season at the Empire City track, and fourth Metropolitan meet held at Brighton Beach track.

A Columbia gasoline car driven by relay of operators makes record day-and-night trip from Chicago to New York in 76 hours.

National Association of Automobile Manufacturers is allotted 50,000 square feet as space for collective exhibit of American automobiles at St. Louis world's fair.

A. L. A. M. enters its first suits against alleged infringers of Selden patent.



The Packard transcontinentalists, Messrs. Fetch and Krarup, reach New York, after a trip of great interest and much incident.

One provision of Bailey law declared unconstitutional in a New York city court, and eastern motorists are encouraged to renewed efforts in their fight upon its undesired provisions.

Mr. and Mrs. Charles Glidden, of Boston, cross the arctic circle in an automobile.

Barney Oldfield makes his first appearance as a driver of Winton Bullets in a race meet at Louisville, Ky.

Two-day race meet at Columbus, O., the second meet of the season in the Ohio town.

First automobile track race meet in Europe held at Frankfort, Germany.



Boston Y. M. C. A. opens an automobile school under auspicious conditions—Wide range of instruction offered all classes of persons interested in motoring.

San Francisco and Los Angeles each have 3-day race meets—At the latter Barney Oldfield on the Winton Bullet II breaks the mile track record for the sixth time during the season, placing it at 54.45 seconds.

The fourth annual Thanksgiving day hill climb up historic Eagle Rock hill, under auspices of the Automobile Club of New Jersey, held with great success—The best time up the 8-percent grade mile was 1:36 3/4, made by W. K. Vanderbilt, Jr., with a Mors car.

After a year of preliminary work the New York State Automobile Association is permanently organized.



L. L. Whitman, driver of the Oldsmobile transcontinental car, finishes his plucky trip by running front wheels of his machine into the Atlantic ocean, the rear ones having been wet in the waters of the Pacific at the start.

Great big race meets at Cleveland, Detroit, Syracuse and Providence.

The Patent Title Guarantee Co., of New York and Chicago, announces that it is prepared to defend makers in Selden patent infringement suits brought by the A. L. A. M.

The A. C. A. conducts a successful club run through New England.



The Automobile Club of America challenges for the Gordon Bennett cup and accepts entries for position on the team from Peter Cooper Hewitt, Alden Sampson II and the Peerless Motor Car Co.—It is decided that professional drivers may be employed to pilot cars in the race.

German Automobile Club selects an 85-mile course near Homburg, Germany, for the 1904 Gordon Bennett cup race—Accepted by international committee—Will be covered four times—June 17 selected as the date of the race.

MOTOR AGE

Published Every Thursday by
THE TRADE PRESS CO.

1303 MICHIGAN AVENUE CHICAGO
Telephone Calumet 7011

New York Office, 134 West 38th Street.
London Office, American Publication Bu-
reau, 58 Manor Park Rd., Harlesden, N. W.





Entered at the Chicago Post Office as Second
Class Mail Matter

Subscription, Two Dollars per Year
Foreign Subscription, Four Dollars

Any Newsdealer may obtain Motor Age through
the Western News Co., Chicago, or any
of its branches, on a returnable basis

A LESSON AT GREAT COST

Chicago is a grief stricken city. The undreamt and unparalleled catastrophe which caused her sorrow has been wired to the far corners of the earth.

The burning of the Iroquois theatre has brought the hearts of all men of all races together in a common humility. There is no need to repeat the news; to retell the story of the frightful tragedy that brought a great city, the whole world, perhaps, to tears.

But MOTOR AGE takes this late though its first opportunity to extend its sympathy to the city of Chicago and especially to those of its people who suffered directly and most by the unfortunate calamity. It believes that the automobile trade as a whole, which it represents, joins it in so extending to the afflicted the small grain of comfort within its power.

Those who read may grasp the significance of such a disaster. Only those who have seen can fully realize the full measure of horror and of sadness in the scenes of last Wednesday night.

Only to those who were so unfortunate as to witness such scenes enacted; to see the tears stream down the faces of great, strong men injured to all the chances and hardships of life, but nerve broken as they bent over the burden of death they carried from the smoke enwrapped holocaust, is the helplessness of human sympathy truly comprehensible.

There is no reparation for such a tragedy that can stifle the heart sobs of the sufferers. There is no justice strong enough to place blame enough, or to punish enough for that blame, to mitigate to the smallest extent the grief of Chicago homes.

In thought for the living only can reparation be made for the dead. The world has been taught a lesson, needed much. It has been given at a frightful cost. It should not be neglected.

It does not apply only to theaters. It affects every avenue of enterprise; every relation of men to one another; the line of industry represented by MOTOR AGE.

The lesson is being felt by the people and executives of Chicago. The future is being reckoned upon. Chicago has awakened to the fact that it has always and forever gambled heavily with fate.

This same tendency to take issue with chance

and to even tempt it, is notable in the automobile trade and sport as in anything else.

The exercise of care for the safety of others as well as of self, becomes for the moment important. When the spur of interest in and excitement over the recent tragedy is past, it should be considered equally as important.

Automobile factories, stores and garages have elements of danger which may be removed or the safeguards against which may be improved and more closely watched.

Carelessness in such cases may cost lives, just as carelessness killed 600 of Chicago's men, women and children. Even the vehicle operator sometimes holds the lives of others in his hands, and by his care or his carelessness determines fate.

This is truly a time to think!

AMERICA WILL LEAD FRANCE.

"Although the French people may turn out good automobiles, they can't do it without the use of American machinery, and it just made me swell with pride to go through just made me swell with pride to go through the Panhard, Clement and other factories and see the almost universal use of American automatic machinery. Especially was this the case in the Clement factory.

"My visit was primarily on the sundry problem; there were few things that we require in this country. The French are far behind us in many things and in another year there should be comparatively little importing of sundries. I think this same thing applies to the importing of cars. I predict that this year will be the last of any account for imported automobiles.

"I must say the French are progressive in some things. For instance, the Panhard cup racer is ready now for the journey of next June.

"Next year is going to be a year of tops. Everything is fitted with a top of some sort. The tonneau seems to have had its day and instead the makers are lengthening the wheel base of the cars and putting a side door, reached by two steps, for entering the rear part of the vehicle."

Such are the words of an American, Frank Evland, returning from abroad. Such an expression can surprise no one, except possibly a Frenchman.

FARMERS NOT UNFRIENDLY

There has been a mistaken notion among a goodly portion of the automobile drivers in

this country that the farmer is extremely antagonistic to the power driven road vehicle. Such is not the case, as recent events indicate.

There have been isolated cases where the farmer has not seen fit to submit to reason and where possibly he was justified in his attack upon the comparatively new vehicle. It is possible, also, that the unreasonableness came from the other side.

The report of the meeting of a farmers' club in New York state shows that while the farmer has had some cause to complain he has taken the situation philosophically and realizes that in time his troubles will end.

He had to pass through the bicycle stage and is now well into the automobile era. He plainly says he has no objection to the automobile, nor to its presence on the public highway; he feels, however, that so long as the roads were created at least for his use before the advent of the automobile, he is entitled to a partial use of them.

He does not wish to be crowded off by ponderous, swiftly moving locomotives, as perhaps he used to crowd the cyclist off in the days of long ago. He realizes and has realized since those days that the road is for no one class; that all have rights which should be respected by others.

He desires only sufficient time for his horses to become accustomed to the snorting, swiftly moving machines, just as they became accustomed to the bicycle, the trolley and other modern means of conveyance. He may sometime have an automobile himself.

Nothing in all this is at all unreasonable; not one sensible motorist will take issue with him, but on the contrary will support all he has said and give him all he desires. More than that, the reasonable and sane man will respect the farmer's hand poised as a signal to stop; he will aid that farmer in teaching his horse that no harm will befall the beast; he will be his friend and he will expect only his rights and civil treatment in return.

The farmer is too quick to realize a good thing to be to any extent unreasonable. He is interested in the automobile, as was shown by his aid and friendship and interest in the recent endurance test, and he at least wishes he had one. He will have one some day, and then he will be the strongest ally the automobilist has in the crusade for better roads.

Be reasonable with him; cultivate his acquaintance; stop for him; talk with him; interest him, and you will do more for the cause than you could in any other manner.

The Illinois legislature convenes next winter, when about half of the present membership will be replaced with new faces. Of all states that are needful of a campaign on good roads this one holds a leading position. The automobile enthusiasts ought at least to have sufficient interest and pride to take steps toward securing the passage of a bill which will make it within the possibility to have a beginning in this direction. There are now enough motorists to start the ball rolling where wheelmen left off, even if the ball has flattened out a little.

After the inventive genius has run himself out on automobile matters what will the patent office do to keep busy?

No well plotted story is now complete without having an automobile in the affair somewhere.

A Reminder That

THREE YEARS AGO THIS WEEK

The Automobile Club of America decided not to enter a team in the international cup race.

TWO YEARS AGO THIS WEEK

The Chicago Automobile Club commenced inter-club work, projecting the formation of a national organization of clubs, afterward resulting in the A. A. A.

ONE YEAR AGO THIS WEEK

The Automobile Club of America set February 1 as the date of closing of entries for places on the Gordon Bennett race team and April 11 as the date of the preliminary trials.

WILL BE WORLD-FAMOUS FOR SPEED TESTS



Where the Road Will Begin

Los Angeles, Cal., Jan. 4—What is destined to be the world's greatest automobile race course is being laid out near this city; on the plain between the southwest side of the city and the Pacific ocean. Where the course begins is about midway between this city and Santa Monica, near what is known as the Palms, a small village. As will be seen in illustrations, the starting point begins on the present highway at the end of a shaded strip of road bordered by full grown pepper trees, which almost meet over head.

The 7½ miles parallel the new short line, a double track trolley line, which leaves the Santa Monica line near the starting point of the new boulevard, and runs direct across the great La Ballona Rancho to Playa Del Rey.

There is less than 15 feet fall in the whole distance, and on the mile and kilometer stretches, which will be marked for the purpose of speed tests, there will be a fall of less than a foot in the whole mile. The mile will contain the kilometer and will be about midway of the 7½ miles, which will give 3 miles to start in and 3 miles to slow up after making the fast mile. This course being parallel to a mile-a-minute trolley road bed will make it possible to watch races from trolley cars, and will thus be susceptible for a moving grandstand plan of racing, with races run faster than was ever dreamed of before. The course is to be 100 feet wide.

The surveys and profiles have already been made, and over three-quarters of the right of way already secured; the only delay now necessary before beginning work is in closing the sale of several small pieces on the inland end of the 7½ miles. The first work will be the simple grading for the surface, and the surface will be of California's famous rotten rock, which surface material will be delivered along the boulevard by trolley cars. The railroad people already have the material out and have arranged to deliver it on the grounds to the Automobile Club of Southern California, which has charge of the work of building this boulevard. The first road bed will only be 30 feet wide, and this will be increased during the year to 100 feet, for next winter's racing.

The money for this splendid straightaway will be contributed, enough having already been obtained from the recent automobile races to build the original 30 feet drive-way. As the whole 7½ miles will be over private right of way controlled by the automobile club it will be kept up like a cycle path and only automobiles, motor bicycles and bicycles will be allowed upon it, and the Automobile Club of Southern California will reserve the right



MOTOR AGE

Club Men Inspecting the Course

to close the boulevard on certain occasions for automobile races.

It is quite probable that the expense of keeping the boulevard in perfect shape will be arranged for by charging a fixed annual fee to all automobile owners who wish to use this boulevard, as is done with cycle paths.

There is but one road crossing in the whole distance, and that could be closed on occasions when desired. The prime object of this boulevard will be to make an ideal automobile road from this city to the Pacific ocean by the shortest and straightest route. Along the ocean a boulevard is being built to connect all the principal resorts and the splendid automobile straightway will strike this ocean front boulevard at Playa Del Rey; thus automobile owners can go to their beach homes and summer cottages with their own automobiles as quickly as they could go from their office to their various homes in the city.

It was announced when the automobile races were being promoted here in November that the total proceeds would go towards building good roads, and the Automobile Club of Southern California thought it best to build one piece of continuous good road instead of scattering their money in patch work on present highways.

Here and there about Los Angeles, there are stretches of perfect roads, but like most other parts of the country, there is no continuous piece of good road that will permit automobiles being run at top speed for miles, and so Chairman Frank A. Garbutt, who is the leading racing spirit of the Automobile Club of Southern California, picked out the above described straight-away course between the Palms and Playa Del Rey, and secured 3 miles of the right of way before bringing it before the rest of the club.

Late in November the board of governors of the automobile club, members of the Los Angeles Automobile Club, as well as many of the members of the Automobile Club of Southern

Birdseye View of the Straightaway

California, were taken over the route with Superintendent Clark of the Los Angeles-Pacific Railway Co., and survey and estimates were thoroughly examined. Early in December the board of governors of the A. C. of S. C. considered carefully the proposition and voted to raise all the funds necessary to complete the straightaway in addition to the sum of \$7,000 it already had set aside for this work.

The total cost of the 7½ miles will probably be about \$30,000, and the boulevard will be fenced in, and closed at both ends substantially with gates, so that it can be closed when necessary and the gate-keepers and caretakers will be sworn in as deputy sheriffs so that horse drivers or those not entitled to use the boulevard can be arrested if they attempt to drive upon it.

Washington street, one of the principal thoroughfares of this city, runs in its extension within a half mile of the inland end of the new boulevard. Adams street, the most aristocratic avenue in Los Angeles, debouches into Washington street in less than two miles from the beginning of the boulevard. Pico street, another city thoroughfare, which runs miles out into the Cahunga valley, can also be used to reach the new boulevard. These three wide avenues will give ready access from the city to the splendid straightaway and are now used to reach Santa Monica, which is the oldest and best known resort on the South Pacific coast, and is only 4 miles north of Playa Del Rey.

IN ITS NEW CLUB HOUSE

Boston, Jan. 4—Work on the new club house of the Massachusetts Automobile Club is to be started this week, and will be rushed along until it is completed. The new structure, which is to adjoin the present quarters, will have a frontage on Boylston street of 87 feet, with 100 feet depth, and when completed will be one of the best automobile club houses in the country. The building will be of brick, with terra cotta trimmings, the front being of mottled gray to the second floor, and above that dark red, laid Flemish bond. Besides affording spacious accommodations for the club members, room is provided for the storage of over 200 automobiles. The first floor will contain storage room, a ladies' room to the left of the entrance, and the superintendent's room to the right. At the rear is to be a large washstand, and adjoining this is the elevator, running from the basement to the upper floor. The second floor is principally for storage, but contains also a chauffeurs' room, with lockers and toilet, and washstands for machines.

MOTOR CYCLES IN FRANCE

Paris Show Exhibits Far Behind Those in England, But Intense Interest Is Shown—Makers Optimistic Over the Business and Believe It Will Equal the Automobile Trade

Paris, France, Dec. 18—While the automobile is of course the star attraction at the show, there are a great number of motor cycle riders who consider that division of the exhibit of almost equal importance, and the motor cycle stands are receiving their due share of attention. The display here does not equal those at the recent shows in London, because the French have not taken as active an interest in motor cycling as the British, but nevertheless the exhibit by the French makers is a most creditable one.

For a time the motor cycle was almost forgotten in France, but it has again sprung into favor on a greater scale than ever before. This revival is due principally to the many motor cycle races, consumption tests, hill climbing competitions, record trials, and the recent endurance trials which aroused interest and enthusiasm throughout France. That the motor cycle manufacturers are determined to keep up this interest is evidenced by the remark of a maker this week who said: "We are not going to drop the interest, and feel confident that the motor cycle industry in France will soon not only equal that of England, where it is at present in high favor, but on account of our better roads we will become the leaders, just as we now are in the automobile field."

There are no striking novelties in the French machines, about the only feature noticeable being that nearly all the manufacturers have evidently come to the conclusion that the right place for the motor is on the lower fork of the frame in front of the gear. Only one or two makers vary from this position.

Another noticeable feature is that almost all of the motor cycles, with the exception of the racing and freak machines, have either a 2-horsepower or 2½-horsepower motor. These machines develop from 28 to 35 miles an hour, which the manufacturers claim is sufficient for ordinary touring. Quite a number of the machines are water-cooled, and this method seems to be growing in favor.

Some of the main features of the different French machines are as follows:

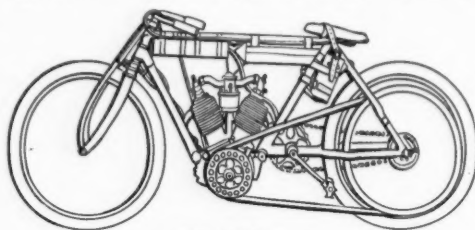
GRIFFON—One of the machines on exhibition at this stand has a two-cycle motor of 3 horsepower, the gas being compressed in the crank chamber. This type of engine bids fair to become popular because of the suppression of working parts and the increased power obtained with less weight. The standard patterns with four-cycle engines have a double front fork, also with a new spring fork, the coil springs being placed in the round tubes above the fork crown. The two-cylinder machine has a Longuemare carbureter between the two inclined cylinders, and when equipped for touring is fitted with a large tank and one coil instead of two.

GOBRON-MINERVA—The frame on this machine is lower than on other motor cycles, making it a comparatively easy matter to mount and dismount. The motor is suspended by two strong tubes which are fitted to the lower frame bar. The cylinder and the body are cast iron and made in one piece. The motor is 2¾ horsepower, the valves are me-

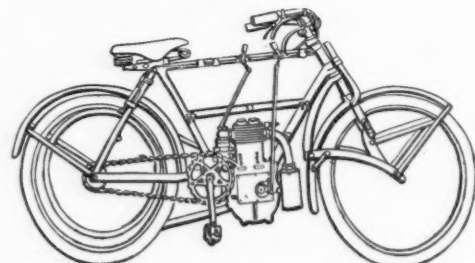
chanically operated and both brakes are on the rear wheel, one on the hub and the other on the rim.

MOTO-CARDAN—There is a direct drive by means of the propeller shaft with universal joints, similar to the transmission on a car. The motor is arranged across the plane of the machine. The mudguard equipment is better than on most French machines.

HERTLE-BURNEAU—This firm presents a novelty in a little 1-horsepower machine which is probably the lightest motor cycle ever designed, the weight complete being 48 pounds.



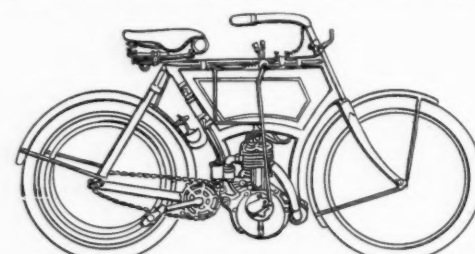
The Griffon



The Peugeot

The cylinder is of pressed steel, the head being given a pointed form, with the top bored to receive the inlet valve. The exhaust valve is fitted to one side and the plug is opposite. The exhaust valve is opened by a small cam actuated by a Bowden cable. There is no muffler and the exhaust escapes directly into the air. Belt transmission is used.

WERNER—There are several improvements in the 1904 model. The combustion and valve chambers are cast in one piece, with an air space between, and radiating flanges encircle the valves. The carbureter is in the tank and is hidden from view by a door. A free engine is obtained by expanding the flanges of the engine pulley to enable the V belt to slip on a free running ring. The bracket spindle is divided so that both cranks can hang down together. When the left pedal is released the bracket brings it back to its normal position for pedaling. The inlet valve is mechanically operated, and there is a system of regulating the speed automatically when the free engine clutch is thrown out. An electrical device causes the spark to short circuit every other revolution, instead of jumping the plug. The compression tap allows a cer-



The Gobron-Minerva

tain amount of air to be drawn into the cylinder at high speed and assists in giving a perfect mixture and a cooler engine. The exhaust tube is now nearly straight from the engine.

PEUGEOT—Three varieties of Peugeot motor cycles are shown—belt-driven, chain-driven and gear-driven. The firm recommends the belt as being the most satisfactory and simplest. The gear driven is by means of a bevel gear direct to the rear hub. The engine is 2½ horsepower and the Simms-Bosch magneto is used. The magneto machine is attached behind the engine and close to the seat tube, and the transmission being by a ½-inch pitch chain. The woman's model has an elastic fork. Both brakes are applied by Bowden levers and cables.

GROSNE CORMATIN—This is a new machine which has several points of interest. The engine is 2 horsepower, fitted in a slightly inclined position, the main down tube curving under the crank chamber. Above the engine is a double top rail, the lower of the two tubes being slightly curved upward and forward to give clearance to the engine. The lady's model has a single top rail from the top socket lug to a point about 7 inches above the bottom bracket. The transmission is by a flat rubber covered canvas belt. The brake is of the back-pedaling variety.

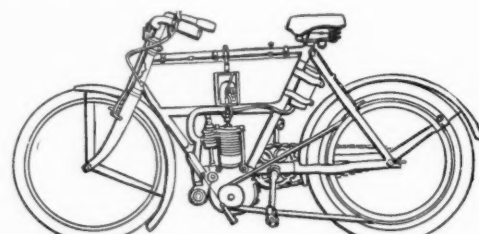
WILL WAGE WAR ON FOREIGNERS

Importers of foreign cars who are identified with the Association of Licensed Automobile Manufacturers are preparing to wage a vigorous warfare on foreigners who may attempt to visit America around show time to sell machines. E. B. Gallaher, who handles the Georges Richard-Brasier, says that particular attention would be given to Messrs. Charley and Fournier who, in past years, have come to this country, disposed of a few machines and then returned to France.

Now that importers as well as domestic manufacturers have joined the licensed association the former believe they should protect themselves from the invasion of foreign agents who may simply come here while there is a demand for cars.

CHAMBERLIN GOES TO EUROPE

W. H. Chamberlin, attorney for the Patent Title Guarantee Co., sailed December 30 for Europe on the Cedric. It was learned at his office in the Marquette building, Chicago, that he would visit London, Paris and Berlin, returning to America in about 90 days. Beyond the fact that it was a "business trip" nothing could be learned of his intentions while abroad. Alan C. Durburow, manager of the company, also claimed to know nothing of the nature of Mr. Chamberlin's visit abroad. "There is absolutely nothing doing now in regard to the Selden patent," said Mr. Durburow, "and there will be no news until after the show. Perhaps we may be able to give you something then. Meanwhile I have nothing to say."



The Werner

GROWTH OF AUTOMOBILE BOATING

Ever since the day of the small power boat, commonly termed a launch, there has been something of the spirit of rivalry among owners, but it remained for the year just ended to develop speed boating into what might be called a sport, and the advent of the automobile and of the speed boat coming so closely together, it is but natural that to the former should be extended the credit for the latter to at least a large extent.

Long before such a thing as a launch fitted with an explosive engine had been heard of there had been small power boats, so that this term as applied to launches or speed boats is something of a misnomer if it is intended to distinguish small from large craft operated by power other than the breath of heaven. The launch is not new, it was used many years ago, but its power was steam and it was a clumsy affair and generally considered a business proposition rather than something for the pleasure seeker; in fact, a launch was little known outside of the navy, all other boats being operated with steam being known as "steamers" or "steamboats." The launch as a purely pleasure proposition came with the small explosive motor and it is not blessed with a history of much over a dozen years.

The first explosive motors to be used in boats were not much different from the two-cycle type of today, though of course crude and generally unreliable, chiefly due to a lack of knowledge regarding the properties of gasoline and ignition. The principles of engine construction have changed little, and there is in operation today many an engine made over a decade ago, but having since probably undergone improvements in the matter of ignition.

❖ ❖

The hot tube was the first form of ignition, and while used by some today, it proved unsuccessful because of the liability of being snuffed out in a strong wind. Along with this form of ignition was the old fashioned surface carbureter, and when one part of a motor would work it was doubtful if it would be supported by another vital one to the extent of proving the machine at all reliable. Generally it did about as it pleased, and never pleased unless nobody cared; then it would work with perfect satisfaction.

It had been proved that a more simple form of carbureter was necessary, and makers generally turned their attention toward this one thing. They had noticed that in starting a gasoline engine it was found necessary to prime it, and the argument naturally was that some form of more direct feed was the correct principle, with the result that what is now commonly termed the generator or vaporizer is almost universally used on the two and some of the four-cycle type of motors, the float feed not having as yet proved most satisfactory for the two-cycle motor.

Up to and including the year just past a very large percentage of the makers of small power boats, and their number has grown wonderfully in the past 10 years, had come to use the primary circuit and make-and-break apparatus for ignition, and some form of a generator or atomizer for a carbureter, with generally satisfactory results except possibly in the matter of economy and where a high speed motor was used.

The cry for speed came, and with it the demand for a motor that would turn up faster,

with the result that the jump spark is now being not only taken up by many of the makers, but it is almost universally used where extreme speed of a motor is demanded. Thus in the matter of ignition the power boat is rapidly following in the footsteps of the automobile. It had been almost proved that a float feed carbureter would not successfully work under all conditions in a boat, but this has been shown to be an error and the later types of motors put out by marine engine builders are fitted with automobile carbureters.

❖ ❖

Outside of the question of carbureters and ignition, the boat engine builders are appropriating many of the smaller devices to be found upon automobiles, such as governors, controlling devices, spark leads, etc.

Up to a year or two ago the ordinary overhanging stern type of launch was about all that could be found, and although a number of this style had been built with fair results, this form was recognized as being incapable of great speed possibilities, owing to the fact that when under way the stern would settle and force the craft off its natural water line. Then came the flat, torpedo model with consequent bettering of results. Today the models are undergoing such changes that it is with difficulty one may keep abreast of the times. The most modern speed boats have retained much of the flat lines aft but have been made narrower forward, the motor is placed almost amidship—in many cases of best results at the forward end of the cockpit—and the boat is kept pretty well on its natural lines. The argument that this type of boat would not prove so good a sea boat has been quickly and effectively exploded.

America had seemingly little time to enter into the matter of speed boats or was satisfied with an ordinary going craft with plenty of room and comfort, but the reports from abroad of the work of the Napier and Mercedes seemed to stimulate the speed merchants, with the result that within a few months a number of boats were put out which were capable of going anywhere from 10 to 20 miles an hour and with reports of even better results.

The French people were the first to take up what is now termed automobile boating, and the Seine is in season pretty well dotted with these craft. Races for both speed and endurance have been numerous the past year, and a large number have been scheduled for the coming season. France, England, Germany and Italy have been caught with the fever, so that now almost every maker of automobiles is having orders placed on his books for either complete boats or the machinery part.

The Americans are not far behind, if at all; they are going in for speed and it is safe to assume that they will get it at no distant date.

❖ ❖

The little cockleshells of boats are fitted with two, four and even eight-cylinder automobile motors of capacity from 10 to 100-horsepower, and it would be strange if speed were not a result of such scheming.

America really has had no power boat races. There have been brushes between individuals, and at Detroit, Providence and New York there have been events which have been called races which, however, were only worthy the name short cruises. Abroad the French have

such an affair frequently nowadays, and it is for the sole purpose of gaining in matter of speed. The first event of any great importance was the Harmsworth cup race, run on the Thames immediately after the Gordon Bennett race of last year, July 11, and which was won by S. F. Edge. This result started a letter and newspaper discussion between S. F. Edge who operated a Napier and M. Charley, the owner of a Mercedes, with the result that another season will see these fast boats pitted against each other more than once, and it may be possible that they will be seen in this country as well. At the same time it must be borne in mind that other makers are now at work with a determination to have something to say in the matter of speed of boats.

Already there are races scheduled to take place between the owners of fast boats in this country and a number of clubs will also card such affairs. There is a possibility, also, that the management of the St. Louis fair will either arrange some power boat races or at least make an appropriation for such and turn the work and details over to some committee of more interested persons. At any rate, there is a very good prospect that there will be such a surplus of power boat races that the American makers will not feel like lagging back and permit the visitors from abroad to take all the honor in this line.

The more prominent American boat builders will build something in the speed line, and because of the natural rivalry that exists it is pretty safe to assert that this country will be well to the front before 1904 closes.

ASSURED OF SUCCESS

New York, Jan. 4.—Among those concerns which have already secured shares for the Herald Square national motor boat show are: Standard Motor Co., Fairfield Motor Co., Isham Motor Co., New York Gas Engine and Power Co., Hasbrouck Motor Works, Palmer Bros., Cushman Motor Co., Reliance Kerosene Engine Co., Fairbanks, Morse & Co., Yacht Gas Engine and Launch Co., Camden Anchor Co., Whitestone Hollow Spar and Launch Co., Clifton Motor Co., Truscott Boat Mfg. Co., Richardson Engineering Co., Carley Life Boat Co., George Crouse Cook, United States Long Distance Automobile Co., Julian F. Dennison, Marblehead Yacht Yard, J. H. Perrine, Pierce Engine Co.

Hollander & Tangeman have been unable to clinch the automobile boat match which they have been trying to arrange with Smith & Mabley. All the details have been agreed upon but it now appears that Smith & Mabley have a possible purchaser for their boat, the Vingt-et-Un, who may object to its being raced. Hollander & Tangemann declare their \$1,000 offer stands for a race with any automobile boat.

In response to the requests of boat owners, it is understood that the Automobile Club of America will soon offer a set of rules for automobile boat racing. Many believe the conduct of this growing sport should be in the charge of those who have so earnestly supervised the racing of automobiles.

The Iroquois theater catastrophe claimed for one of its hundreds of victims Donald Wells, son of S. P. Wells, Jr., of Chicago, both of whom were enthusiastic power boat operators at their summer home.

GREAT GOING ON THE BEACH

Packard Gray Wolf and Stevens-Duryea Machines Attack Records and Make Remarkable Showing, Indicating that America Will Soon Hold Most of the World's Records

Daytona, Fla., Jan. 5—The Ormond-Daytona beach sustained its reputation as the fastest automobile speed course in America the past few days, and those of the visiting automobilists who made their headquarters at The Inn at Ormond leave with unqualified satisfaction, both as to their speed trials and kind treatment at the hands of the Ormond-Daytona people. It was not generally known that there would be attempts made on the records the past week, but a few New Yorkers were in the "know." It had been arranged that the Packard Gray Wolf should be turned loose, so it went after the record bone in good style and she only demonstrated what her designers and friends claimed for her. The J. Stevens Arm & Tool Co., of Chicopee Falls, Mass., also possess an alert sales manager in the person of C. C. Hildebrand, who had a scheme to offer for some record breaking. The Gray Wolf landed here 3 days after the arrival of the party, after a small fortune had to be expended in telegraphing to try and locate it.

The Stevens-Duryea racer arrived Wednesday morning, and Mr. Hildebrand and J. Frank Duryea were anxious to see Nestman try and get some records to close up the old year. The machine was soon in readiness, also the 15 miles of telegraph and telephone wire. The little Chicopee Falls production was first sent after the mile record for machines of 1,000 pounds and under, of 1:06%, made on the beach last March by the Oldsmobile Pirate. The telephone from the end of the mile announced that the record had gone. New figures of :58% had taken its place; several times again did Nestman tackle the enemy and finally got down to :57%, which he thought was the best that could be done with the gear he was using. He next went after the 5 miles and made 4:57%.

Charles Schmidt, the Gray Wolf driver, had the Packard in shape for a mile trial. The beach record was :52%, made by Winton. When Schmidt received the signal to go he was traveling fairly fast, but it was seen

that he was not getting all out of the 24-horsepower Packard. The clock gave the time :54%, which did not satisfy Waldon and Schmidt. The next day he drove the Packard five individual miles, every one of them being below those of the first day; two of them being :50%.

The Packard was next sent after the 5-mile record. When the time, 4:21%, was announced the fairly large number of spectators gave the Florida Indian yell.

Satisfaction came in large chunks Sunday morning, the day following, January 3. J. F. Hathaway, a confirmed believer in the



beach, wanted the Packard people to try a mile with a favorable breeze blowing, and the breeze came as if made to order, as a stiff norther came up. Sunday morning, when the tide was almost out and the beach fairly dry, driver Schmidt unlimbered the Packard and the machine with the brute name was once more sent after the mile record. This time it was thought that the world's record was within reach, that made in France this year of :46%.

The first trial showed :46%; the next trial showed :47 flat. Again Schmidt headed for the starting point and it was seen that he was going to do something desperate. The

clock showed :46%, or three fractions from the world's record.

The best kilometer distance accomplished yesterday by the Packard was :31%, but Sunday the clock showed two of them at :29% and :29%.

Yesterday the Packard was again brought out for a try on the beach, and the mile record was attacked five distinct times, the times being :46%, :47, :46%, :47, :46%, while the two kilometer trials brought :29% and :29%.

The times developed this week are already the fastest ever made in America and only indicate that it is at least a possibility that before the meet is over this country will hold world's records.

The mile in :46% is but the two fractions away from the world's record of :46 for heavy cars, while the kilometer record of :29% equals that made by Baras with a voiture legere.

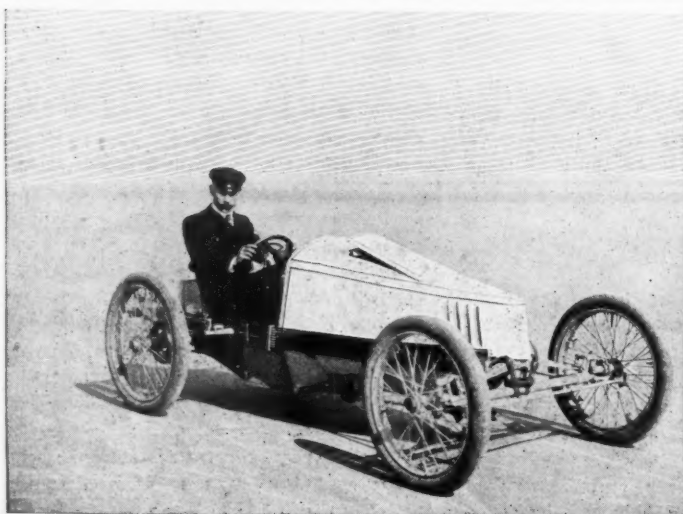
Joseph Tracy will drive the 1903 Peerless racer in the Florida tournament. It is not unlikely that a match for the meeting will be arranged between W. G. Brokaw's Renault racer, to be driven by Bernin, and B. M. Shanley, Jr.'s 40-horsepower Decauville.

Sidney B. Bowman, of New York, says that Dominick Lamberjack has sailed on the Deutschland to visit the New York show. He brings with him a 60-horsepower Clement, with which he will try to lower some straightaway records on the roads in the vicinity of New York. The trials will be made in private if special permission cannot be obtained for racing on the road. He may also enter the Florida automobile tournament.

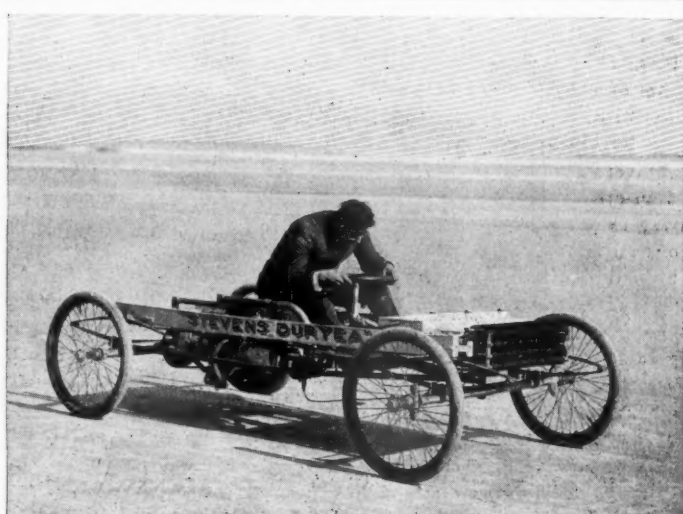
COOPER AND OLDFIELD AGAIN

Cleveland, O., Jan. 5—Barney Oldfield and Tom Cooper may tie up again. The record breaker has been in Detroit and made a contract with the former cycle champion to manage him next season. A local story has it that Oldfield and Cooper propose to open an automobile store in New York.

"There is no truth in that," said Charles B. Shanks, of the Winton company, over the 'phone to-day. "Barney and Tom have it in their heads that they would like to go into business together in some eastern city. We would not permit Oldfield to open an opposition Winton agency in New York and, of course, he must not be identified with any other machine



Charles Schmidt on the Gray Wolf at Ormond



Nestman Driving the Stevens-Duryea

during his present contract with us, which does not expire until next August. If the new partnership pans out there is a chance that they will go into the retail trade in the east. That is all there is to it."

Later in the evening a MOTOR AGE man had a talk with Oldfield at the Hollenden.

"I do not intend to embark in the retail venture with Cooper until after the conclusion of my contract with the Winton people," said he. "In 1905, though, Tom and I will have the biggest and finest automobile establishment in New York. This racing is a risky business and if I pull through next season I hope to do so with enough money to insure

PLACE FOR VANDERBILT

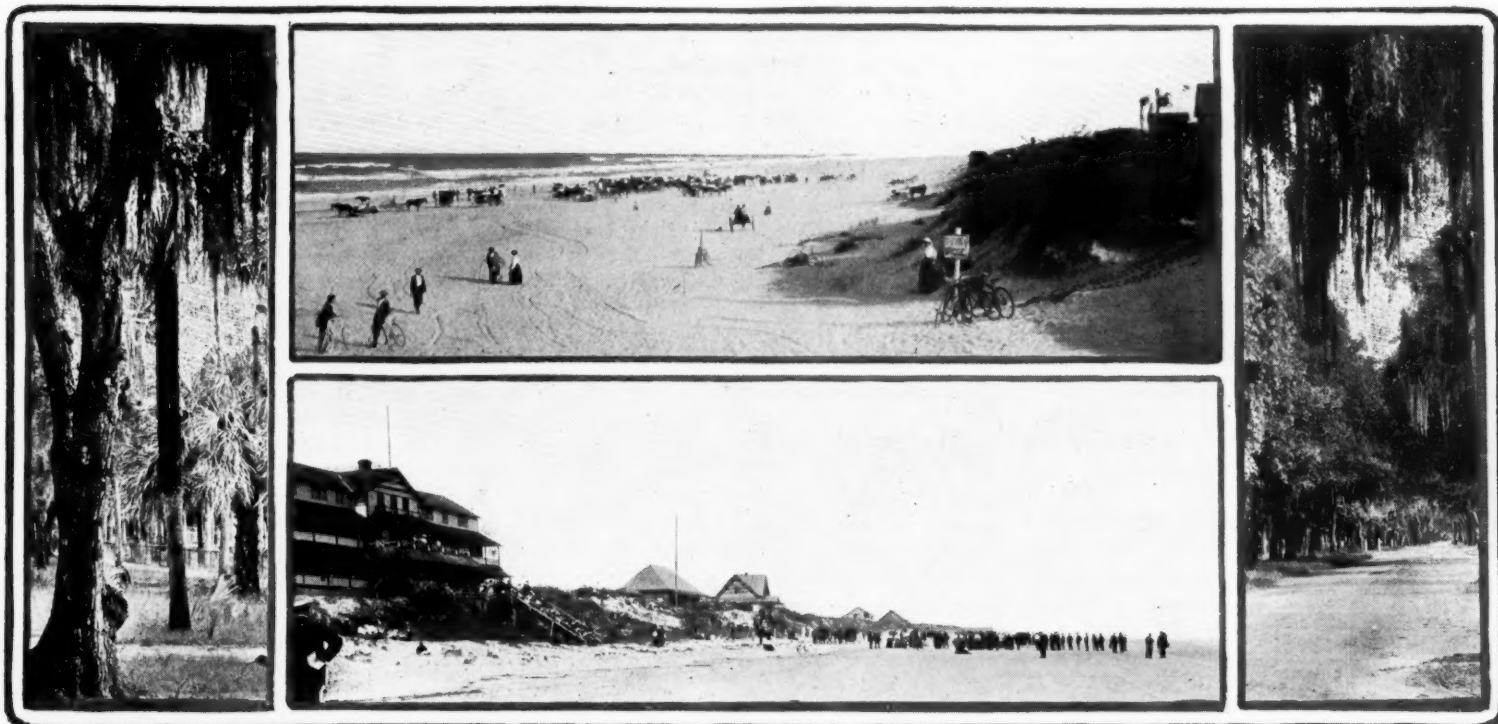
Millionaire May Be on the A. A. A. Racing Board—Newspaper Men Desire Recognition

New York, Jan. 4—To a MOTOR AGE representative it was said last week by one in authority that W. K. Vanderbilt, Jr., had been approached regarding a position on the racing board of the American Automobile Association and had expressed his willingness to serve if selected. Those interested in racing matters will hold a meeting this week to dis-

mittee in charge of the affair, says it will be the most important gathering of automobilists and good roads advocates ever held in America.

The Automobile Club of America's holiday smoker was a huge success. About 150 members and friends filled the clubrooms, smoked the long Dutch pipes and enjoyed the feast of talent provided by Emerson Brooks, chairman of the entertainment committee. Supper was served at 11 o'clock.

Appraisal of the estate left by Elliott Morris Zborowski, known also as Count Zborowski, who was killed in an automobile race at Nice last April, shows him to have been



Upper View—Daytona End of Beach

MOTOR AGE

Lower View—Ormond End of Beach

my being well fixed for the rest of my life, though, with my capital invested in a legitimate business which will not necessitate risking my neck on the track.

"I am not prepared to say whether I will go to the Florida meet for the mile record. Racing is a business with me and I must figure on what my expenses would be. I am sure, though, I can beat 46 seconds."

CLEVELAND CLUB HAS A HOME

Cleveland, O., Jan. 4—The Cleveland Automobile Club, which now numbers in its membership about a hundred owners of automobiles, opened club rooms in the Hollenden hotel on New Year's day.

Lately the officers decided that in order to give its members some tangible benefit the club feature should be established, and the result of this decision was the opening yesterday of a permanent automobile headquarters in the Hollenden, on the grill room floor and just west of the grill room. Two large rooms have been thoroughly refitted, and will be open to members of the club and touring members of the National Association from 11 o'clock each morning until late in the evening.

The rooms will be open to the members for dinner parties, and automobile literature will be on file. A series of smokers will be inaugurated at once, and it is expected that the club will soon number many more members than at present.

cuss changes in the racing rules. A. R. Par-dington, chairman of the racing board, has asked for suggestions from owners of fast cars, from racing men and from meet promoters. Secretary Gillette says the new A. A. A. book will be ready next week. It will contain the present records and a list of sanctions granted during 1904.

The appointment of the racing committee of the A. A. A. has, it is said, caused considerable friction between two daily newspaper men of the city. Both, it is declared, are candidates for positions on the committee, notwithstanding that the A. A. A. officials have declared their intention of appointing men of wide reputations. One of the candidates declares that his opponent's experience of racing is confined to managing bicycle riders and the other retorts that his opponent's knowledge of racing matters is equal to his ideas of an automobile motor, having recently described a steering box being geared to the differential of the carbureter. Both of the men are well liked and their friends resent the ridicule which their candidacy is meeting in the trade.

For its annual dinner to be held at the Waldorf-Astoria, January 23, the Automobile Club of America has secured, among others, such well known speakers as Congressman W. P. Brownlow, the father of the good roads bill now before congress; Colonel Albert A. Pope, James B. Dill and G. E. Tarbell. Captain Homer W. Hedge, chairman of the com-

worth \$2,643,421. The count evidently had a premonition of disaster, as on the day before the race started he made a will leaving his property to his wife and son.

COOPER'S 999 REJUVENATED

Detroit, Mich., Jan. 5—Tom Cooper's 999 has been rejuvenated at the Ford factory. After its disastrous plunge through a few county fair buildings, where one of Cooper's men was putting it through its paces—and anything else that happened to be in the way—it was thought the machine was entirely wrecked and it was consigned to the scrap heap. When looked over carefully, however, it was discovered that the motor was practically uninjured, and some of the frames were in such condition that they could be used again. Mr. Ford took it in hand, changed the gear, altered the motor, bored it out larger, and, in fact, pretty nearly made a new piece of machinery out of it. Next Saturday Mr. Ford will take 999 out for a trial against the straight-away record. Lake St. Clair will be the scene of the trial. It is a sheet of ice several feet thick just now, and a course has been laid out on Anchor bay, at the north end of the lake, and about 25 miles from Detroit. Here there is a sheet of unbroken ice 12 miles in length, and on this a cinder track is being constructed. Mr. Ford believes this is about the fastest track which could be built. The only point is under what class would such records come?

CLEVELAND GREAT MANUFACTURING CENTER

Cleveland, O., Jan. 4—At the time of the New York automobile show last year it was commonly admitted, in view of the preparations being made by the fifteen or more recognized automobile manufacturers, that the Forest City would easily carry off the palm as being the automobile center of America. Lately, however, due to several failures in Cleveland, together with the new concerns that have developed in Detroit, the citizens of the City of the Straits have been shouting that the center of the industry has been moved to the pretty little city across the lake. The New York show predictions have been fully carried out and so far as 1903 production is concerned Cleveland was ahead of any other city in the country, and while it is possible that next year will see more automobiles built in Detroit than in Cleveland, it is a safe guess that the value of the Cleveland built cars will total a larger figure than the productions of the Michigan metropolis. And if Detroit carries off the palm for numbers, her factories will have to turn out something over 4,000 automobiles, for Cleveland's output will undoubtedly reach that figure during the coming season.

Totalization of figures furnished to MOTOR AGE by Cleveland manufacturers indicates that 2,805 automobiles, with a total list valuation of \$5,589,250, were produced within the city limits during the season, not to mention the enormous amount of material for thousands of out of town manufacturers that was furnished by the numerous material manufacturers. Such figures are almost staggering when it is considered that only 5 years ago Alexander Winton took his first order for an automobile, and that it was not until 2 years ago that this pioneer manufacturer had what may have been said to be a competitor in this district.

It is not surprising that Winton, the founder of the industry in this section, still maintains his lead. The big factory, which at the time of its erection was undoubtedly one of the largest plants of its kind in the country, has been more than doubled in capacity in anticipation of the coming season's demand, and it is now unquestionably the largest factory of its kind in the world. In a city famous for large manufacturing plants, the Winton easily exceeds in floor space any factory of any description in Cleveland. The output during 1903 was 850 cars; not greater perhaps than several other factories, but with a \$2,500 list price for each machine the valuation of its product reaches \$2,125,000. For 1904 the Winton people are committed for 1,000 automobiles at the start. Material for that number has been ordered and work is progressing on a systematic routine on this basis. It is figured that these cars will be completed before June 1. After that it is an open secret, not yet officially announced nor yet denied, that work will start on a four-cylinder car already designed, and that several hundred of these will be produced. Thirteen hundred cars will undoubtedly be the Winton output during the coming season.

During the past year the White Sewing Machine Co. built and sold about 700 of its steam touring cars. Not only are these giving satisfaction to owners in nearly every state in the union, but the White people have invaded foreign countries to an extent perhaps greater than any other maker,

certainly any maker of steam vehicles. A prosperous branch store has been maintained in London and from that point Whites have been sold not only in the British Isles, but in France, Germany and Russia. While the White people have not erected an enormous factory for the coming season, their facilities have been greatly increased, and the output during 1904 will be considerably larger than it was this year.

The Baker Motor Vehicle Co., which by reason of its light, handsome and efficient little vehicle has acquired a position almost distinctive among electric vehicle makers, built about 400 runabouts and phaetons during the past season. For the coming season, in answer to a demand for a heavier car, the company will make a feature of the electric surrey which was illustrated in a recent issue of MOTOR AGE. The Baker people are preparing plans for a large factory to be erected during the coming season, but it is doubtful if it will be completed in time to have much effect upon this season's output. But the company is preparing to increase its facilities at its present factory, and with the help of the new, the latter part of the season, the output of Bakers will probably reach 600 machines.

In the front rank of builders of high-priced touring cars is the Peerless Manufacturing Co. Sales Manager Kirkpatrick is explicit in speaking of their sales. Two hundred and ninety-nine—not 300—Peerless cars were turned out during the past season. Three of these were burned up before they were delivered, in a freight wreck, and three are now in use at the factory, making 293 cars actually sold. With an average price of \$3,500 this is an output not to be sneered at. The company will not attempt greatly to increase this output another season. With its present factory facilities this is impossible. But the company has made an early start and a number of cars have already been completed. It is probable that the output will not exceed 300 of the 24-horsepower cars and fifty of the 35-horsepower cars. The former range in price from \$3,700 to \$4,000 and the latter from \$5,000 to \$6,000, so if this program is carried out the Peerless company need not be financially embarrassed a year from now. As a matter of fact, Mr. Kirkpatrick maintains that he has bona fide orders for all but fifteen of the 350, which shows that his extended tours of late have not been in vain.

The General Automobile Co., formerly the General Automobile & Manufacturing Co., built about 130 of its single and double-cylinder cars during the past season. Since its failure the receivers sold about twenty-five cars in various stages of completion. The company has been reorganized and is now in strong hands. New models showing many improvements have been designed and it is probable that the output will be considerably larger than it was last year.

The number of cars built by the Cleveland Automobile Co., at the head of which is A. L. Moore, is not known for publication, but it is probable that 200 machines is about the figure. The company is going ahead for next season and will have a two-cylinder as well as a single-cylinder car.

The Hoffman Automobile & Mfg. Co., which has been succeeded by the Royal Motor Car Co., built about 100 cars during the past season. The machine was a light single-cylinder

runabout which proved very popular, a number of them being sold in Chicago. For the coming season the new company will build heavier cars; one model a two-cylinder car of 16-horsepower and the other a four-cylinder car of 32-horsepower. The new products show radical changes throughout and the Hoffman type of car has been wholly abandoned. The company is now in shape to make deliveries.

The F. B. Stearns Co., whose car made such a remarkable record on the recent New York-Pittsburg endurance run, as well as in later road tests, has never made any pretensions at being a large manufacturer. It has devoted itself to the production of high-class touring cars and has aimed to build only a few machines, but to make them as good as money and skill could produce. The output during 1903 was about fifty cars, and with increased facilities and an early start it is expected that this figure will be about doubled during the coming season. The Stearns people have completed four cars which will be shipped to the New York show. They illustrate the different types of finish and bodies the company will furnish during the coming season. One of the cars will have a limousine or coupe body, a type entirely new with Cleveland makers.

Paul Gaeth, a maker regarding whom little has been published and who has devoted his time chiefly to building cars to order for local people, sold in the neighborhood of twenty-five machines, the majority of them two-cylinder touring cars. Mr. Gaeth is preparing to expand during the coming season and has leased the factory formerly occupied by the Broc Carriage Co., corner Pearl street and the Nickel Plate railway, where he expects to produce quite a number of cars. His machine, known as the Gaethmobile, has acquired a very creditable reputation, and he will undoubtedly have all the business he can handle.

A newcomer in the field is a company not yet named, but backed by interests connected with the Russell Motor Vehicle Co., which has acquired a factory building having 15,000 square feet located at Leydon street and the Big Four railway. The Russell company sells parts and accessories of all kinds and the new company will manufacture these parts as well as build complete automobiles. The two companies will be conducted as distinct organizations, although they will be closely allied.

Otto Konigslow, the well-known material manufacturer, is building complete automobiles, but they will not be sold under the firm name. Fifty cars are now under construction for an out of town concern and the company will be prepared to furnish any of the parts embodied in the car, as well as in the general line of stampings, pumps, gears, etc.

The Berg Automobile Co., while not strictly a Cleveland concern, has recently increased its factory space and will be in shape to produce a considerably larger number of cars than it did last year. The Berg is a high-priced car which shows a number of distinctive features.

Brew & Hatcher, heretofore known as material makers and general contractors, are building complete automobiles, although the cars will not be sold under their own name, being built to the order of an out of town manufacturer. The car will have 15 horse-

power, will carry five passengers and will weigh 1,500 pounds. The firm will embody in this car a number of devices of its own design and will be prepared to furnish them to other makers as well. The firm is doing a large amount of work for local and out of town makers, supplying complete motors, transmissions, pumps, oiling devices, carbureters, clutches, strainers, etc., some of them built after the specifications furnished by manufacturers and others after their standard designs. The firm has recently added to its equipment and is in shape to take care of a great amount of this class of work.

A new and unknown quantity in the local field is the Cleveland Motor Co., a concern headed by E. J. Pennington, who claims to have built the first motor cycles and the first automobiles ever constructed in this country. In the early '90s Mr. Pennington built a motor cycle in Cleveland which showed unquestionable practicability, but evidently he was ahead of the times, for the machine never became a commercial article in this country, although it is said he sold the foreign rights in England for a large amount and that motor cycles are still built abroad under his patents. Mr. Pennington's latest proposition is a gasoline horse or fore carriage. He has announced that he is prepared to fill orders on his machine, which may be attached in front of any ordinary carriage. The machine is built in two sizes, a 7-horsepower single-cylinder and a 14-horsepower double-cylinder, both vertical motors. Demonstrations have recently been made in Cleveland and the device appears to operate satisfactorily. Mr. Pennington claims he will revolutionize the automobile industry. He is also preparing to supply an immense touring car capable of carrying twenty passengers and equipped with double-cylinder motor which will develop 300 horsepower. A car of this type is actually nearing completion, and the MOTOR AGE man has seen it. Factories having unquestionable facilities for producing goods are at work on both types of cars, although it is not claimed that the 300-horsepower car will be produced in large quantities.

The coming season will see almost double the number of dealers than there were last year. Only one Cleveland retailer failed last season, and evidently a large number of people have become convinced that fortunes are to be made in selling and caring for automobiles. It is hardly probable that the number will ever become so great as in bicycle days, because it takes more money to make a start in the automobile game than it did in the other, but it is literally true that new concerns are springing up in every portion of the city. Practically all of the old concerns are preparing to move into larger quarters or have already done so, and next season Cleveland will support—or perhaps break—some of the finest automobile establishments in the country. Practically every line of importance in the country will be represented here and practically all of the local manufacturers will have branch stores or downtown agents.

The record for the largest number of sales did not fall to a Cleveland-built car last year. Ralph Owen, of the Ohio Oldsmobile Co., was easily the largest dispenser of automobiles. His sales numbered 480 cars, of which a trifle over 300 are in use in Cleveland. The others were sold through agents in Cincinnati, Dayton, Columbus, East Liverpool, Akron and

Painesville. Mr. Owen is now calling on a number of prospective agents and he hopes to increase his list in this state. He also anticipates selling more machines in Cleveland another season, although he realizes that this will prove a most difficult task. To aid in this work Mr. Owen is planning to move into a larger store, where he will have better facilities for showing and handling his line. Mr. Owen has become interested in the automobile boat game and has taken the agency for the Bascom Boat Co., of Bascom, O., which manufactures a launch body. Mr. Owen is preparing to furnish any kind of engine desired with this body and will build launches practically to order. He will display a sample at the Cleveland show.

The now defunct Cleveland Automobile & Supply Co. was probably second in point of sales last year. About fifty Cadillacs and twenty-five of various other makes were sold and a very large number of cars were stored and repaired, but despite this fine business the company, in some way, failed to make ends meet. A. M. Barnes, receiver for the company, states that the affairs of the company will be placed in the Referee's court next week and that after matters have been straightened out the company will undoubtedly be reorganized by some of the old stockholders. He states that the lease on the fine Vincent street garage will be retained, and that in all probability the Cadillac will be a leader; this in spite of the fact that another concern claims to have secured the Cadillac agency.

Charles B. Shanks, at the Winton branch, sold in the neighborhood of fifty-five Winton touring cars last year. The outlook for next year is so promising that a larger establishment will be needed, and, as already outlined in these columns, work has been started on a very large garage to be located adjoining the present store.

George S. Waite, the White retail manager, gave the Winton people some very hard competition, and sale for sale they were about equal throughout the season. Mr. Waite is in charge of what is undoubtedly one of the largest, finest and best equipped garages in the country, and he is making every effort to increase his sales of last year. The new White, which is being shown at the local store, seems to possess a number of new and interesting features.

The Ohio Motor Car Co. will move into a very fine garage on Erie street, mention of which has already been made. This company will have the agency for the Cadillac and the Northern, and the Stearns will also be sold from its store, although not on an agency basis. The Stearns people have made an arrangement whereby they will conduct their own repair shop and have their own salesman and the business will be in charge of R. M. York, sales manager of the Stearns company, who will have a desk and devote a portion of his time there. All repairs on Stearns cars will be taken care of at this point, leaving the factory entirely free for manufacturing.

T. C. Whitcomb, who has been with the Ohio Motor Car Co., is at the head of the Whitcomb Automobile Co., which will locate in an establishment immediately adjoining the store of the Ohio company on Erie street, and will handle the Ford and National lines. There will be no connection between the two concerns and each will have its own repair and storage departments.

The Automobile Garage & Repair Co., 427 Erie street, did not close for the Peerless, as heretofore reported, and instead will make a leader of the Packard. It will also handle the Autocar.

The Peerless will be in the hands of the Phillips & Chisholm Automobilia, which, as reported last week, will open a large garage on Euclid avenue in the east end. The Peerless company states that this will be one of the finest stores in the country and it will give the Peerless company a local representation such as it has never been able to secure heretofore.

Frank R. Blackmore, who has conducted an automobile repair shop on East Prospect street, has decided to build a garage adjoining his present place, which is located opposite Watkins avenue in the east end residence district. He has not yet closed for a line, but expects to do so in time for the Cleveland show.

The Geneva Automobile & Mfg. Co., whose local branch is conducted by B. T. and N. A. Quilling, at 260 Euclid avenue, enjoyed a very satisfactory season last year. About twenty-five cars were sold, some of them in the city and others in surrounding towns. The company made a special bid for physicians' business and sold a number for this class of service. The branch will be retained another season.

W. N. Booth, whose garage is located at Payne and Wilson avenues, sold several Overlands last year, and will handle this machine again, although he will take on another line. He expects to move into larger quarters in the spring.

The Acme Motor Car & Repair Co., S. Levi proprietor, is preparing to open a garage and repair shop on Euclid avenue near Wade park. He is open for a good line of automobiles.

F. X. Franz, formerly general manager of the Sandusky Automobile Co., of Sandusky, has the local agency for that car, and he is preparing to open a downstore store for the Sandusky. No location has been decided upon.

Cleveland's material manufacturers are almost too well known to require detailing. Every variety of article entering into the construction of any type of automobile is manufactured here and all of these manufacturers are now hard at work supplying material and parts for makers all over the country. It is the general sentiment that business will be larger than it was last year, despite the possibility of hard times, and the majority of the material people have contracts already booked which go to warrant this opinion. Among the leading material makers are the following: Federal Mfg. Co., pressed steel frames, chains, stampings and parts; Standard Welding Co., tubing, rims and electrically welded stampings and parts; American Ball Bearing Co., hubs and ball bearings; Hussey Drop Forging & Mfg. Co., forgings and parts of all kinds; Parish & Bingham Co., steel wheels, pressed steel frames and special stampings; Otto Konigslow, stampings and parts; Globe Machinery & Stampings Co., special parts; Bullock-Beresford Mfg. Co., spark plugs and ignition devices; Willard Storage Battery Co., storage batteries; Nungesser Battery Co., sparking batteries; F. H. Bultman & Co., gears; Hayden Eames, sales agent for supplies of all kinds; Theodore Kuntz, bodies; John Oleson, trimmings; Louis Doering, trimmings; L. J. Mueller, sales agent for general line.

NORTHWEST PROVING A BIG FIELD

Minneapolis, Minn., Jan. 1—The demands of the great northwest will be one of the big factors in the trade of American automobile houses this year. The anticipations of the most sanguine of the dealers are being realized even this early. Local houses, which to a large extent control the business of the entire northwest, are flooded with inquiries, and are closing orders for spring delivery every day. The past 2 weeks have given some indication of what may be expected as soon as the spring selling season opens. From every corner of the northwest inquiries, backed up by substantial promises, have been pouring in. During the 2 weeks there has been more activity in automobile circles than during the same period in March of last year. The business of the year just closed was little short of marvelous. The dealers who endeavored to supply the enormous demand for machines were driven to desperation in their attempt to get machines, and to secure quarters for storing, selling and repairing.

Two new automobile establishments were erected during the year, and several of the dealers took time to move into larger places. Not until the end of the season, however, did they have time to figure on new quarters sufficient for all purposes. With the season over, however, all of the principal houses made immediate plans for more room. As a result, one new four-story building, one new three-story structure, and several additions to present quarters are being erected in Minneapolis; while two St. Paul firms have already moved into new quarters as large and complete as the majority of the eastern houses.

The trade last year simply swallowed up every machine of any kind that could be secured. Sample machines sent out for inspection from eastern factories were sold before the dealers had a chance to show them to more than one prospective customer; and in many instances, where the dealer tried in vain not to sell. The big touring cars were sold to some extent, but the greatest run last year was on the lighter runabouts and convertible types. These proved the most popular on account of their serviceability, and they are sure to be the big factor in the business this year.

From the opening of the season last year, the country demand for cars gave local dealers great trouble. The demand in St. Paul and Minneapolis was taken care of by the middle of the season, but the cry for cars from out-

side, throughout Minnesota, and North and South Dakota, and even from Montana, increased as the prospects of a good harvest increased. Farmers, country doctors, and business and professional men who do business in the country, snapped up the cars as fast as they could get, and started home across country. In this way machines were placed all through the state, in many cases without the aid of traveling representatives, or any kind of soliciting.

And it is from these cars that the dealers are now hearing. The demand from the country promises to be something to furnish the dealers with plenty of trouble, if cars cannot be had when wanted. Minnesota roads have improved greatly during the last few years, and it is safe to say that before many more have passed, the town-to-town traffic of the state will all be done by automobiles. But local dealers are not fearful of a shortage of cars. They have made all plans for early delivery of stocks, and have placed orders for hundreds of cars, so that there will be no chance of a shortage.

Most of the houses are planning for an immediate opening of business outside the Twin Cities. Traveling men will be put on this month by most of the houses as the majority of the machines are handled throughout the entire northwest by their local representatives.

Sub-agencies will be established in all of the principal cities of the northwest by the local dealers, and through these agencies the country trade will be supplied. The Pence Automobile Co., which handles the Autocar, Cadillac, Packard, Stevens-Duryea and other cars, has thus far established ten sub-agencies in South Dakota, about the same number in Minnesota, and several in North Dakota.

The car to be sold in the cities this year will probably be the medium priced car—and the largest car obtainable for the price. A large number of the big touring cars were placed here last year, the Winton and Packard leading, and more will be sold this year. But the smaller car, furnishing good power and plenty of capacity, with a medium price, will sell to the best advantage. The runabout will of course be popular, though it is doubtful if they will predominate the sales, as they did the past season.

From the country the demand is almost entirely for the runabout, suitable for road work. Good machines, with tonneaus detachable, and capable of standing road work, as they proved they could do, will go like proverbial hot cakes among the prosperous farmers, and country merchants and professional men throughout the country.

It is believed by dealers that the demand for electric in Minneapolis will increase materially this season. St. Paul has taken hold of the electric with enthusiasm, and has many more than Minneapolis. The level streets of the latter city have been so conducive to speed trials that motorists have considered the electric too slow for their purpose. It has grown in favor, lately, and many orders are now being placed for electric machines.

Among the dealers, one of the most prolific subjects of conversation is the delivery wagon. Local merchants have been besieged during the winter by the dealers, and it is believed that the siege has not been in vain. Several of the largest commercial houses of the city have been using trial wagons, and are ready to instal more complete lines in the spring. The dealers are pushing the delivery wagons hard, and intend to place a great many of them. Most of the wagons will be of the lighter city delivery style, although several houses are figuring on trucks and heavier wagons.

The new building for the Pence Automobile Company, which is rapidly nearing completion, will scarcely have an equal in the west. It will consist of four stories, and full basement. A 40 by 40-foot exhibition room will be located on the first floor. As the dimensions of the building are 50 by 130 feet, this leaves a large garage space on the main floor.

The second floor will be devoted to repair shop and machine shop. The front of this floor, 50 by 30 feet, will be used as club rooms by the Minneapolis Automobile Club. The third and fourth floors will be devoted to storage. The building will be heated by steam and equipped with a large electric elevator.

A. F. Chase & Co., northwestern agents for the Oldsmobile, have started work on a new building, to be occupied exclusively by them. The structure will be two stories and basement, and will be equipped in the most modern manner for the automobile business. Both the Pence and Chase buildings will be ready for occupancy by March 1.

CHICAGO HOPES TO DOUBLE BUSINESS

Chicago, Jan. 5—The new year will be more strenuous than the one just closed among the automobile dealers of Chicago. There are more cars to be sold and more agents to sell them this year, and while it is probable there will be more buyers, it is undoubtedly true that more effort will be required on the part of the dealers in order to get a satisfactory balance on the right side of the ledger. Last year many sales were lost because of the inability of the dealers to supply the demand, but this season the manufacturers think they have more accurately gauged the situation, and the supply is likely to more than meet the demand. The general public is better informed now on the automobile and the average buyer knows about what he wants, and he is sufficiently well posted to be able to make a

choice among the many cars offered for sale.

"There have been fewer inquiries and sales during the past month than there were during the corresponding time last year," said Walter L. Githens, of the Githens Bros. Co., agent for the Oldsmobile. "This may properly be ascribed to the extremely cold weather, which has caused people to temporarily forget the pleasures of automobilizing, but with the first breath of pleasant weather the thought of the motor car will return. We find that the inquiries of prospective customers are now of a more technical nature, and the public seems to be better informed in regard to the practical use of the automobile. The demand this year will be for cars of proven worth and reliability. We anticipate a greater volume of business the coming year than ever before,

and with the increased facilities at the factory we will be able to accommodate our customers promptly. Our new models will give a greater variety and we can now supply almost anything desired in the automobile line."

"I believe there will be keener competition among the dealers this year," said Frank P. Illsley, "because there are more dealers and more manufacturers represented. There are about thirty-five dealers in Chicago, and I estimate the sales for 1904 will be about 700 cars. This means that there will be some hustling if each dealer gets his share of the business. The people are demanding a practical vehicle that will stand up under test, and the manufacturers will have to build with greater care and avoid many of the trifling errors of past years, most of which resulted from care-

lessness; or possibly from inexperience, would be a better way to put it."

J. B. Deibler, manager of the Chicago branch of the Haynes-Apperson Co., is optimistic and believes the coming year will be a busy one for the manufacturers and consequently a profitable one for the dealer. He thinks touring cars will be in much greater demand, and is firm in the intention to do his share toward supplying the people with what they want.

Dan Canary, of the Dan Canary Automobile Co., 521 Wabash avenue, pins his faith to the French machines, and thinks the foreign cars will have a greater sale this year than last. "The French makers turn out a superior car," he said, "and while they ask more money for

their cars, the difference in reliability and service is worth the increase in price."

C. J. McLain, manager of the Apperson Bros. Automobile Co., Chicago branch at 394 Wabash avenue, thinks the coming year will be a good one for the sale of large cars, and he expects a larger volume of business than that of last year. M. E. Cooke, who handles the Reber car in Chicago, has his office with Apperson Bros., and anticipates a large sale for his car, the inquiries coming in at present showing that the public is desirous of learning more about the Reber car than is told in the trade journal advertisements.

A. C. Banker removed last Monday from 460 Wabash avenue to the Kimball building in Michigan avenue, where he will stay until

April 1, at which time the building at the northeast corner of Thirteenth and Michigan will be completed. This building will be 100 feet front and three stories high. It will be occupied jointly by Banker and the Winton Motor Carriage Co. Banker is preparing for a big sale of Autocars the coming season. He may add other cars to this line after the New York show.

The Greer Motor Car Co. is established temporarily at 508 Wabash avenue, where a stock of second hand cars is offered for sale. The company is negotiating for a location on Michigan avenue. The president, Frederic Greer, will go to the New York show and arrange for the Chicago agency for one or more cars for the coming season.

WASHINGTON TRADE DOUBLE PREVIOUS YEAR

Washington, D. C., Jan. 2—The year just passed was in every way the most satisfactory the Washington automobile trade has ever known and the dealers enter the new year with a feeling of the utmost satisfaction. Fully twice as many machines were sold during 1903 as during the preceding year, indicating a remarkable increase of popular interest in the automobile question. The capital city is growing steadily, a fact that is forcibly brought out in the new city directory, just published, and the automobile trade is sharing in the general prosperity. While the trade has had many things with which to contend, particularly the automobile regulations drafted early in the year, which were bitterly fought by the automobilists, thus causing the daily press to raise a big hue and cry against the automobile with the result of seriously hampering the sale of machines, the dealers have nevertheless steadily overcome every obstacle and have made up the ground they lost temporarily by this foolish newspaper agitation.

The greatest demand during the year was for cars of small type, like the Oldsmobile and Cadillac. Vehicles like these fill a very important place in automobiling, and they are likely to continue in public favor here. The larger cars have also had a good sale and increased demand for them is predicted by all the dealers.

All the members of the local trade appear to take a decidedly optimistic view of the outlook for business during the year just opening. If the expression of opinion given by them to a MOTOR AGE correspondent may be taken as a criterion. In spite of the gloomy view that some have seen fit to set forth in other trades, the local members of the automobile trade seem to think that there will be good business this year, and they are going to conduct their business on that basis.

One of the best posted men in the trade gave the following views: "That just ended was our banner year, the volume of business showing an increase of fully 100 per cent over 1902. This is a very gratifying showing, in view of the adverse conditions which prevailed during a portion of the year. Regarding the prospects for business during the next twelve months, it looks to us as if the good record of 1902 will be sustained. It is presidential year and, of course, there is the usual fear among the timid that a change in the administration will cause such an overturning of public policies as will exercise a bad influence upon business. What a presidential year may bring forth can only be predicted, but we are not crossing any bridges until we come to

them. Summed up, we shall probably see that the year will be a good one in the automobile trade and we will likely find ourselves richer at the end of 1904 than now."

The Washington branch of the Pope Mfg. Co., which is under the management of W. J. Foss, has just passed through the most successful year it has had since automobiles were added. The percentage of increase in the volume of business was fully 100, and all the various machines carried in stock, including the Cadillac, Toledo and Waverley, shared in the good record. The line this year will be augmented by the Pope Hartford runabout and the Pope Tribune. Manager Foss is of the opinion that the covered automobile will have a great sale. He has in mind a number of improvements in the salesroom that will give him better facilities to show his stock. These will be undertaken at an early date, so that everything will be in readiness for the spring trade. Mr. Foss predicts another record-breaking year in the sale of automobiles.

The Willard Automobile Station entered the field late in the year, but the results achieved cannot fail to give great satisfaction to those who compose the company. The Ford car will continue to be the leader with this establishment and probably one or two other makes will be added after the New York show. Manager Kull is very optimistic regarding the outlook for business and is making plans to handle a great amount of business.

The Edison Automobile Station is another concern that commenced business when the year was half gone, but Mr. Edison has no cause to complain of the amount of business that fell into his hands. He has relinquished the agency for the Pan-American and the Holston and is now negotiating for one of the most popular cars on the market.

Progress has been the watchword with the National Capital Automobile Co. and material progress has been made by the company. Excellent business has been done with the Oldsmobile, and also with the Peerless, Packard and Pierce. A big year's business is looked for by the members of the company.

Cook & Owessney, local agents for the Winton, Stevens-Duryea and Orient buckboard regard the outlook for business this year as being fine. Last month they celebrated the first anniversary of their entry into the local field and they are much pleased with what was accomplished during the year.

There will be a full representation of the local trade at the New York show and it is expected that a number of new agencies will be made.

It is understood that the difficulties between David K. Joslin and the Edison Automobile Station, arising from the use of the name of Edison by Joslin and others, has been settled to the satisfaction of all parties concerned. The MOTOR AGE correspondent was unable to get complete details, but from the information at hand it seems that Mr. Joslin will in future conduct his automobile business on Connecticut avenue, under the name of the District of Columbia Automobile Co.

The National Capital Automobile Co. has requested the district authorities to reconsider their decision, declining to permit the company to maintain a wooden structure building against the side of the company's garage on Eighteenth street. The company explains that the shed is not for the purpose of holding gasoline barrels indefinitely, but is to be used as a temporary place where the gasoline barrels can be put while their contents are being transferred to an underground tank. The building inspector has recommended that this building, for which no permit was ever issued from his office, be removed, according to the former direction of the district commissioners.

The National Electrical Supply Co. has filed with a justice of the peace suit against the Edison Automobile Co. and David K. Joslin for a debt of \$276.57.

The National Capital Automobile Co. has given a bill of sale of certain chattels in the garage at 1120 Eighteenth street, northwest, to S. S. Olds, Jr. The chattels consist of certain automobiles which were transferred to Mr. Olds in lieu of certain money owed to him by the company.

DETROIT SHOW SPACES TAKEN

Detroit, Mich., Jan. 4—At this writing practically all the spaces for the Tri-State automobile show in the Light Guard armory have been sold. Only four spaces, these in the gallery, are left, and sixteen manufacturers are on a waiting list for space on the main floor, which they will probably never get for this year's show. About all the larger firms will be represented, and the prospects are for a very successful show. The way in which the annual show has taken hold of Detroit is something wonderful. The first one was given 2 years ago, and few people outside of its promoters had much faith in its becoming a popular annual feature. Last year, however, all the spaces were sold and the big building was crowded every day. This year the exhibitors made such a rush when the space was offered that within ten days everything was gone but a few gallery spaces.

SYRACUSE NOW AN AUTOMOBILE CENTER

Syracuse, N. Y., January 5—The past year has been an eventful one in the automobile industry and those engaged therein find no cause for discouragement. At the beginning of the year it was seen that there would be an unprecedented demand for automobiles and the manufacturers made plans to turn out a large number of machines. The expectations as to the number of people who would be using automobiles before the summer was over were more than realized and it is through no fault of the consumer that two Syracuse companies ceased to manufacture automobiles. The trouble in both cases was lack of capital to turn out the necessary number of automobiles and to make a profit thereon.

During the year the H. H. Franklin Mfg. Co. has occupied its factory, which has been duplicated by a factory still larger than the first. The second building has only recently been occupied and the number of employees has been increased from seventy to over 300. The company believes it has demonstrated that the principal of air cooling is a success and its career is one of the most interesting developments of the year. The company has already sold three times as many cars for 1904 as were made during 1903.

The Century Motor Vehicle Co. took orders enough at the New York show to keep its factory busy during the entire year and the automobile world was greatly surprised early in the summer to hear that the company had closed its factory and called a meeting of its creditors, offering to settle for 25 cents on a dollar. The company produced an excellent gasoline machine but was unable to swing the amount of business it undertook. This fact, coupled with the impossibility to turn out cars at the price at which it was estimated they could be turned out, forced the company to give up the ghost until matters could be straightened out. Affairs are still in an unsettled condition, the probability being that before the new year is far gone either the Century company or a new concern will be turning out automobiles at the factory in East Water street. The Century company went to great expense in purchasing new machinery and has one of the finest automobile plants in the country.

Two months before the close of the old year it was announced that the factory of the J. S. Leggett Mfg. Co. had been closed and that the company had decided to liquidate its affairs, J. S. Leggett resigning as president and general manager. The company was perfectly solvent and paid 100 cents on a dollar. One mechanic is still at work there finishing up a few machines. It is rumored at the present writing that this company will also be reorganized and will turn out a machine for 1904. The trouble with the Leggett company was that its stockholders did not put up enough capital to conduct a business large enough to yield profits.

Upon the ruins of the I. A. Weston Co., which manufactured automobile sundries, has sprung up within the past week the Jamesville Mfg. Co., which has been incorporated to manufacture automobile parts. The directors of this company are Albert Spencer of Jamesville, Herbert Hotaling of Syracuse, James Olcott of Jamesville and A. H. Spencer of Rensselaer.

It is probable that at least four concerns will be turning out automobiles in Syracuse dur-

ing the new year. The manufacturers of automobile accessories have had the most prosperous year since the beginning of the business. The Brennan Motor Co. has had to enlarge its factory and put on more men in order to fill the demand for gasoline motors which it sells to large manufacturers and to individuals. This company has worked up a large and profitable business by furnishing motors in connection with completed drawings for automobiles and a large number of such machines are in successful use all over the country. Mr. Brennan says he has no doubt that 1904 will show a great increase in the use of automobiles. He bases his conclusions upon the number of orders he has received from manufacturers and from his immediate contact with the trade.

During the year the Brown-Lipe Gear Co. has taken possession of the offices and factory formerly occupied by the Franklin Automobile Co. and during the greater part of the year, according to manager H. W. Chapin, the factory has been running nights. Gears and transmissions made by this concern are being successfully used by a large number of manufacturers, including the H. H. Franklin Mfg. Co. of this city.

The New Process Raw Hide Co., which makes gears and other parts for automobiles, will, during the new year, erect a new factory. This company has been educating the public to the use of gears made out of hide and treated by a patent process. Those interested in the company prophesy a greatly increased business in 1904. The new factory will cost \$20,000.

A rival of this company has been just formed under the name of the Syracuse Raw Hide Mfg. Co., which will also make gears for automobiles and other articles out of raw hide.

In September of the past year, the last day of the state fair, the Automobile Club of Syracuse gave the first race meet ever held here. One of the largest crowds of any meet of the year was present and saw good sport, although the particular stars expected were unable to come. The success of this meet was such that it will undoubtedly be an annual event. That it stimulated the sales of automobiles in this city is unquestioned.

The Syracuse Automobile Co. closed the year with an auction, in which it disposed of all the machines it had left preparatory to moving into the big six-story building in South Salina street, which will be its home during the coming year. All the accessories of an up-to-date garage will be found at this plant. This company will be the local agent for the Franklin, Oldsmobile, Winton and several other leading machines. President Cornwall says he expects to sell three times the number that he did last year.

W. H. Bissell opened a new garage in South State street during the last month of the old year. Mr. Bissell has a convenient and well equipped plant and will also be the agent for several of the leading makes.

The Central City Automobile Co., which flourished for a few months and then went to the wall, conducted an elegant automobile station in East Genesee street, but was compelled to give up owing to poor management and lack of capital. This concern had what was one of the best equipped plants in the state and the owners of machines were sorry it was compelled to go into bankruptcy.

The year has been prosperous for the Auto-

mobile Club of Syracuse, which has nearly doubled its membership. Owing to the work of two members of this club, Frederick H. Elliott and Hurlbut W. Smith, the state automobile association was formed in this city, embracing every club in the state. Together they will work for satisfactory laws and for the interest of automobilists.

The latest club which has just been organized is the Chenango Automobile Club, with the following officers: President, C. W. Lamphere; vice-president, C. H. Latham; secretary, B. W. Stover; treasurer, H. H. Highley. This club will probably affiliate with the state organization. Mr. Elliott, the secretary of the state association, will during the coming year open headquarters in this city and devote his whole time to the interests of the organization.

BUFFALO'S JUMP IN ONE YEAR

Buffalo, N. Y., Jan. 4—The year 1903 practically opened the automobile boom in Buffalo. Previous to that time there was owned in Buffalo not over 300 cars. At the outset there were six manufacturers, five of whom were making gasoline models and one electric; three of these—Spaulding Automobile Co., Conrad Motor Carriage Co. and Kensington Automobile Co., together with the Morlock Automobile Co., which succeeded the Spaulding company—have been compelled to make their exit from the industry. There are now two gasoline car manufacturers, the Geo. N. Pierce Co. and E. R. Thomas Motor Co., both of which have attained enviable positions in the trade. The Buffalo Electric Vehicle Co., it is said on good authority, will move its plant to New York City, but owing to the absence of the president, F. A. Babcock, this is not verified.

The garages and retail stores, while not numerous, are apparently satisfied with the result of the year's business. About 400 new automobiles were sold during the year, principally of the runabout class—gasoline for power, of course, predominates; there is practically no sale for steam cars and the electric carriage has but few admirers outside of women operators. While a big increase in business is anticipated for this year, the general impression is that there are too many agents. There are twenty-two retail dealers in the city, while others contemplate opening stores.

The Buffalo Automobile Club was barely existing at the dawn of last year, but a revival took place in the spring. A large dinner party was held to which automobile owners and the trade was invited. The old club was reorganized and W. H. Hotchkiss elected president and F. J. Wagner secretary. They have worked untiringly in the interest of the organization with the result that the club now is about the strongest, numerically, in the country. A membership committee for this year, consisting of five hustlers, will doubtless bring the membership close to half thousand before the snow flies next fall. The club held three runs during the summer and entertained the contestants and their friends during the endurance run from New York to Pittsburgh. The club and trade association will jointly run the automobile show March 6 to 12.

The trade has organized a very strong association and counts in its membership every dealer in the city, as well as all the tire houses with branch stores here. All in all Buffalo has made such strides that, if the rate is maintained, it will be a leader.

BOSTON'S AUTOMOBILE GROWTH WONDERFUL

Boston, Jan. 4—While standing on the threshold of a new year and looking over the twelve months that have gone, one cannot help being impressed with the great progress made in the automobile world; not only in the manufacture of motor vehicles, but also in the more common adaptation of the same. This is apparent in all sections of the country, but in no one city more than in Boston, which, noted for its conservatism, was somewhat tardy in accepting the automobile. Once recognized as something more than an experiment, however, the motor vehicle has become most popular, and its onward march has been somewhat like that of the youth with the "seven leave boots."

It might really be said that until last winter Boston was hardly awake to the possibilities of the automobile, and while it is true that several first-class agencies and automobile dealers had established themselves in business in this city, the results were not then so beneficial either to the dealer or the manufacturer as they might have been. This was eminently shown by the banding together of the dealers for the purpose of increasing the automobile interest, and in the endeavor to interest the masses in the automobile. The endurance run from New York to Boston and return excited the interest and the curiosity of the people; but, strange though it may seem, the real interest was not awakened until towards the opening of last year.

The Massachusetts Automobile Club, to be sure, possessed a fine club house and a good list of members, but, like all such organizations, the club kept to itself, and its affairs in the main interest none save its own members. But the opening of 1903 saw a great change, a change which has been a continuous one until today Boston is recognized by the manufacturers of the country as one of the leading automobile cities on this continent. This, of course, has been brought about by the general activity of automobile interests, by the crusade waged against unfavorable legislation during the last session of the state legislature, the holding of two automobile shows, the hill climbing contest, the race meet at Readville, and the general activity of all things in the automobile world.

The Massachusetts club was interested in

the first automobile show, the dealers in the second, and the club in both the hill-climbing contest and the race meet, all of which proved successful and gave to Boston an interest previously conspicuous for its absence. New dealers opened their establishments on the automobile rialto, talked business, canvassed the trade, made interesting news for the newspapers, and all in all seemed to vie one with the other in advancing the general cause. The visit of the Automobile Club of America to Boston late in the summer and that of the Rhode Island Automobile Club maintained an interest, while as a fitting climax to the racing season came the fine race meet at Providence, which, being so close to Boston, was by many considered as a Boston proposition.

Touring likewise became popular with the majority of the owners of automobiles, while the invasion of the north and south shores by the summer residents with their heavy and high-powered foreign automobiles must also be taken into consideration as having a bearing upon the increased interest in the motor vehicles. Many Bostonians likewise imported big machines, which never failed to attract attention, not alone from the owners of wagons but also from prospective purchasers.

The rivalry between the several dealers as regards the holding of the Commonwealth avenue hill climbing record also had a most beneficial effect upon the trade, as the making of those records created news for the dailies, and, this being published, was read and caused discussions of a general character.

It would indeed be difficult for one to determine just what was responsible for this great awakening to the cause of the automobile in Boston. There really was no one particular thing. It was a combination of favorable circumstances which lifted the city to a much higher plane in the automobile commercial and pleasure world.

New garages were built and opened by dealers, new firms came to the city, and what was once known as the cycling rialto has now become known as the automobile district.

Commercially, the year was a most successful one, as shown by the books of the divers concerns, many of which did a greater business in Boston last year than in any other one city in the country, and that is by no

means exaggerating the true condition of affairs.

The outlook for the coming season is one full of promise for a successful business year. This fact is amply demonstrated by the crowded condition of the automobile district. The demands for salesrooms along the avenue are greater than is the supply, several firms have been crowded into nearby streets, and still other dealers are now looking for quarters. New garages are to be constructed or rented by several dealers, such for instance as the Peerless and White people, who are to build; Winton, who is to enlarge the present fine quarters; Thomas, who has secured new salesrooms and garages; Pope, who is likewise in search of new storage places, and Skinner, who is to make extensive improvements in order to take care of his increasing business.

One significant fact in relation to business affairs in Boston is the establishing of agencies in this city by many of the foreign manufacturers, such for instance as the de Dietrich, the Mercedes, the F. I. A. T., the Georges Richard-Brasier and other firms, which have never had agencies east of New York city. There is hardly a manufacturer of automobiles—gasoline, steam or electric—in this country but what will have a representative in this city the coming year, and a comparison of conditions at the present time with those of a year ago, when the dealers and agents could easily be counted on the fingers of both hands, shows full well the great advancement made in the automobile commercially.

Other than in a trade way the season is fully of promise. Starting with the automobile show in March, the indications are that there will be a long list of events. In April the hill climbing contest will be held, then in May comes the race meet under the auspices of the Massachusetts Automobile Club, which organization, by the way, starts on the construction of its new quarters next week. Following the races will come tours under the auspices of the several automobile clubs in the state, with perhaps another race meet in the fall. There is every reason to believe that the year 1904 will eclipse all its predecessors in both business and pleasure.

DETROIT MAKES EIGHT THOUSAND MACHINES

Detroit, Mich., Jan. 1—The year 1903 was the most successful, both from the manufacturers' and from the retailers' standpoint, that Detroit has ever known. About 8,000 automobiles of pretty nearly every model known to the gasoline type, from the little Olds to the big Packard, made up the result of the year's work in Detroit factories. From the retailers' standpoint the year was better than even the most sanguine dealer had expected. Detroit's fine pavements have led hundreds to go in for the sport. Every one of the dealers, and pretty nearly every type of American or foreign machine is represented by its agencies, reported that the year had been most satisfactory.

William E. Metzger, who was the pioneer in the automobile trade in Detroit; W. C. Rands & Co., who represent the Oldsmobile; John P. Schneider, state agent for the Peerless, and the other dealers, all state that the

business of 1903 was the largest in their history. The automobile trade of the entire state of Michigan is practically done through Detroit.

The Detroit-made machine, which has made great strides in popularity in 1903, is the Cadillac. A year ago the Cadillac company was in its infancy. The first machines were just being put on the market, and the factory capacity was possibly 200 per year. This capacity was largely increased, however, in the early months of 1903, and for the year that ended December 31 the output was a few over 2,500. It is needless to say that every machine made was sold, and most of them were sold long before they ever left the factory. Indeed, this was the greatest problem of the company, and though the weather during the last month has been the coldest and most disagreeable in years, it has been found absolutely necessary to work overtime on the big new

buildings which the company is erecting; this when all other building operations in the city are at a standstill, because of the inclement weather. Last week MOTOR AGE reported the purchase of additional ground by the Cadillac people. Plans were completed and accepted on New Year's day for another huge structure, which will have a floor 193 by 93 feet. This is to be used for a testing room, and will be entirely separate from the rest of the factory. Sixteen large testing platforms will be installed. They will be of special design, including several novel ideas for the thorough testing of machines. Friction, wind resistance, carrying power and, indeed, every item which is vital to the construction of the modern automobile will here be as thoroughly tested as human ingenuity can contrive.

When these new improvements are completed, which will be by the middle of February, the capacity of the Cadillac plant will be

almost doubled, and General Sales Manager Metzger has issued instructions to all traveling salesmen that 3,500 machines will be ready for delivery and may be sold for July 1. He places the total output for the year at 4,000, but this figure may be increased if the experiences of the company for 1904 are similar to those of 1903.

In his garage Mr. Metzger is just completing a number of improvements, made necessary by the increasing demands of his business. The offices have been banished from the first floor and now occupy the entire front portion of the second floor. The two-story building which he erected little more than a year ago has been made into a six-story structure, every floor of which is devoted to his automobile business. Not the least interesting portion of his garage is a new department upon which work has just been commenced, where special bodies will be built to order and special work of all kinds done.

"The next move in the automobile industry," said Mr. Metzger, "is going to be the construction of special bodies. As a class automobilists are people who have the means and desire to have something distinctly their own. People are not going to be satisfied very long with machines which are just like every one else has or can buy. They are going to demand individuality, and that is what the new plant in my garage is to supply. We will design and construct special bodies, do fancy upholstering and indeed that portion of the plant, given the chassis, will be enabled to turn out a complete automobile of any style or design demanded."

Detroit's biggest automobile manufacturer is, of course, the Olds Motor Works. A few months ago this company had concluded to close its Detroit plant, sell the ground and

conduct all its business from the plant which it was constructing in Lansing, Mich. It had suffered from one of the most disastrous fires that ever affected the automobile industry, and it was not considered worth while to rebuild the plant. A temporary plant was opened, but within a month or two the business of the company had assumed such proportions that every inch of space it was possible to utilize was necessary. As it has come about the Detroit plant has been enlarged over what it was before the fire, instead of being closed up. The Lansing plant has been worked to its capacity and even then the company has had to have some of its work done on contract outside. The closing months of the year 1903 found the capacity of the Lansing and Detroit factories just doubled over that of the early months of the same year. W. G. Morley stated that between 6,000 and 7,000 automobiles would be the output for 1904.

"We sold as many machines abroad last year as all the other American companies combined," said Mr. Morley. "We had a magnificent exhibit at Paris, next the main entrance to the exposition, and nearly 100 orders were taken at that show. We have not sold any in Iceland or Lapland yet, but I guess those are about the only countries which have not seen the Oldsmobile. More than 100 were disposed of in Russia alone."

The Packard people expect to turn out about 350 machines during the coming year. The new model L car will probably be one of the most popular of the several models and it is the intention to push it vigorously.

The new Packard factory has been in operation since November 10 with 270 men and since December 1 the works have been running 90 hours a week in order to keep up. The cars for the shows have been completed and the

first part of February will see all Packard agents supplied with samples, after which deliveries on orders will be made.

Henry Ford, the man who is fighting the license association, states that he will turn out 2,500 cars during the year. "We began work July 23," said Mr. Ford, "and in the remaining months of the year turned out and sold 650 Ford machines. We are now at work on our four-cylinder, air-cooled, touring car, and will have it ready for the shows. We will be ready to deliver these cars in a few months, and I am very confident that they will make a hit."

The Northern Automobile Co. management expressed itself as more than pleased with its business in 1903. "We turned out more than 500 automobiles," said Mr. Miner, "and could not keep up with our orders. I do not think we will be able to handle all the business we could get in the coming year. We have cut the price of our single cylinder car from \$800 to \$750, and have put many improvements in it. We are just now completing our two-cylinder car for the New York show. This is our '15' car—15 horsepower, 1,500 pounds, and \$1,500, but more than 15 miles an hour. This car has direct drive. The tonneau is not detachable and it is a thoroughly practical touring car. It will be on the market in May."

The new Barthel Motor Co. expects to begin work in a few days. The output will be about 200 for the year; at least that is what is being figured on now. The company has already completed two cars.

In addition to these companies there are nearly a dozen men who are building automobiles, a few at a time, and of various shapes, sizes and models. Their total output will amount to possibly another 250 cars.

GORDON BENNETT RACE DETAILS

It was decided upon the suggestion of Rene de Knyff that while the cars must be made completely in the country of their origin, the core in the magneto and the fabric in the pneumatic tires were made exceptions.

Many private families along the course of the race have already rented rooms. This is particularly true regarding Saalburg, where it is reported that some Americans have paid deposits, while others have given written guarantees for rooms.

It has been decided that when any two drivers reach a control with less than 30 seconds intervening, the one credited with the better time will be given the first start. The idea was originally suggested by Jenatzy. The former regulation was that if a driver caught another somewhere on the road but reached a control 30 seconds after him, he had to wait 4 minutes before being permitted to start.

Up to December 19 only three French manufacturers had entered for the trial races: Panhard & Levassor, de Dietrich, and Gobron-Brillie. The de Dietrich people announced that Jarrott, Gabriel and Rougier will drive cars, and Duray and Rigolly will drive two of the Gobron-Brillie cars. The Daimler Co. has informed the German Automobile Club that Jenatzy and Baron de Caters will drive its two Mercedes cars.

An alcohol hill climbing contest on the Feldberg, a competition in appearance at Homburg and an automobile motor boat race from Mainz to Bingen-on-the-Rhine, will be

arranged during the Gordon Bennett meet, according to the statement made by the German Automobile Club's representative at the recent Paris congress. "We will spare no effort," said Count Sierstorff to the representative of the other seven countries which attended the meeting. "Germany will show its foreign friends that it can do things as right in every detail as any other nation."

The preparations for the big race which is to take place in Germany either in June or July of next year, are taking a larger scope every day. Late advices are that a delegate of the German Automobile Club has sent a circular letter to all the hotel keepers in Saalburg, Homburg, Frankfort, Wiesbaden and other cities near the route, requesting them to send him full information as to the capacity and rates. When the information is received a circular will be issued and sent to every automobile club in Europe, with the request that no time be lost in selecting headquarters, as it is feared sufficient room will not be available.

At a recent meeting of hotel owners and restaurant proprietors in Frankfort, plans were laid out to start at once to prepare for the visitors at the big race. A member of the German Automobile Club stated that from present indications at least 15,000 to 20,000 visitors from foreign countries will see the event. All over Germany caravans are being arranged and there may be fully 20,000 native visitors. Information received from Paris point out that about 500 members of the Au-

tomobile Club of France intend to cross the frontier in their cars, while more than 1,000 others from the French capital will go to Saalburg. Garages will be made to accommodate at least 5,000 motor cars. It will also be necessary to build special hotels in the vicinity of the course. An agreement will probably be reached among the hotel men for a uniform scale of prices according to the different classes of hotels.

The principal topic of conversation among Belgian motorists is the sudden change of mind of the leading automobile manufacturers not to take part in the Gordon Bennett race. Manager Lehmann, of the Metallurgique Co., stated in an interview that the principal reason of this must be traced first to the rather unsatisfactory steel made in Belgium. "It is good steel, but by no means resistant enough for racing cars that will have to go at 70 and 80 miles an hour. Second, we have no rim factory which can furnish strong enough rims. Third, while Belgian manufacturers have made some racing cars they never did it on the same lines as the French and German. We merely did it for the purpose of having our names mentioned, but for improvements and changes to be made on our cars we have had recourse to either private tests or endurance runs. It is likely, however, that from now on Belgian manufacturers will enter the racing game for all it is worth and I personally believe it is of great help to the trade and the general public."

THE READERS' CLEARING HOUSE

VICTIM OF PREJUDICE

Parsons, Kan.—Editor MOTOR AGE—I own a gasoline runabout, the only one here. On account of another's disregard for the public a prejudice against automobiles has sprung up, and where there were other machines, I am the only owner now. I am an old bicycle rider and member of the L. A. W. and have always been careful. In the year I have owned my machine I have had no trouble until now.

In running down a back street, or alley, I did so to avoid teams. I turned to the right on to a main street. A train blocked the crossing ahead, so I was not running more than 3 miles an hour. A team approaching me from behind, on the main street, became frightened, turned and started back on the main street, upsetting the buggy and smashing another rig.

I saw the team as I approached the corner; it was about 40 feet back and did not appear frightened then. Nor did I know of the runaway until I had ended my journey four blocks away. Now the horse owners want me to pay for repairing the rigs. I do not think I am at all to blame, but would like your opinion on the matter.—W. D. LEGG.

So long as an automobile driver observes the usual rules of the road and is not going at an excessive rate of speed he has as much right on public highways as the driver of the horse. Even if the team became frightened at the automobile, and not the train, the team owner has no case. If a team should be frightened at the approach of a street car, train, bicycle or another team, the owner would not think of trying to collect damages. The automobile is a new condition, and in this progressive age people—and horses—must adapt themselves to such new conditions.

WHERE THE MOTOR CYCLE FAILS

Chicago—EDITOR MOTOR AGE—I have read with interest your editorial in MOTOR AGE on motor cycles. You bring up one point especially that I would like to say a few words on—the reason it is not popular here. This is because manufacturers have been blind to the essential features of a motor cycle. They have given us engines that would not turn; that would stick up in cylinders, miss fire, in fact, act devilish. Every one who owned a motor cycle became a warning to others not to do likewise. I bought one and spent all of 1902 on it—always in the gutter endeavoring to make it go. When going, I was shaken into paralysis by its vibration. And so I got disgusted and bought an automobile. I have now bought a monster motor cycle for 1904 use. It has 4 horsepower, 2½-inch detachable tires, carries gasoline for 150 miles, weighs nearly 175 pounds, motor always starts, is so heavy it carries one like a Pullman over the roads, and will carry two passengers easily and speedily. With such an outfit my riding in 1904 will make other riders, as in 1902 I discouraged every one who saw me. Again, the appearance of my monster will be elegant and formidable, and the motor cycling clothes are now made handsome, appropriate and attractive, so that one is honored and admired. I have great faith in the motor cycle. There

is more actual fun in it than in two automobiles; and now that at least one manufacturer has got the machine right, and the accompanying incidents of apparel and supplies are right, we shall see many riders. This will produce the only thing now lacking—company for road runs. There will be no general success in any form of transportation unless there can be the accompanying jolly society and material for eventful rides. We are forming a motor cycle club this winter, and you will see a bunch of us in the spring and will witness our opening "endurance" contest, which will be to Waukegan and return.—BURLEY B. AYERS.

The tendency of motor cycle construction is now toward heavier machines; just as heavier bicycles supplanted the lighter ones.

BELIEVES IN FALL SHOWS

Reading Pa.—EDITOR MOTOR AGE—The question for discussion is rather "Shall automobiles be designated by the number of the year or shall they be given some other distinguishing title," and the answer to this question would seem to be determined by the system of the maker rather than anything else. If a certain vehicle is made only in a certain year, it can hardly be called anything else than that year's rig. If, however, the maker, as many makers do, announces his new styles in August or September, which styles are made and sold in the next 12 months, the year designation does not express the situation fully. While manufacturers cannot be constantly making changes but must turn out a certain model in large quantity if they are to reduce the cost, which is beneficial both to themselves and to their customers, there is no reason why they should not turn out this style of goods immediately after the close of the selling season for the preceding style, and if this is done they will distribute their business over a larger portion of the year than if they hold back their new model until the next selling season and then overwork to the detriment of quality in attempting to take fullest advantage of the business at hand. In the early bicycle days, opening day was March 1, later Washington's birthday, and still later shows were held in November, while wide awake manufacturers began showing their new models in August and September. Carriage dealers hold their annual convention in October or November and when automobile makers become wise they will undoubtedly do the same thing. Ever since September we have been receiving inquiries for spring delivery and many remarks to the effect that the writers intended buying but not until after the New York show. It would seem, therefore, to be nothing but rank foolishness to hold the show in the latter part of January and prevent business that should be done all fall and winter. Further, if the new models are announced in the fall, winter use is encouraged and we cannot do a better thing for the business or for the public at large than to secure the use of the automobile in the winter time, for it is then most needed, because horses are at their greatest disadvantage and the days are shortest.

Further, many people yet doubt the practicability of the motor vehicle and winter use

will remove this doubt quicker than any other one thing. When this subject was discussed some time ago, one prominent maker said a fall show would interfere with spring sales because people would wait for fall before buying. While this may have seemed a reasonable argument in favor of the show in the spring, as a matter of fact, it was just the reverse, for every maker and dealer wants business the year around instead of having two or three months in the spring when there is no time to get goods and take care of customers, and if the fall show will spread the business over the year instead of bunching it in the spring, it is certainly the thing to be desired. The Automobile Club of America set a splendid example when it held its first automobile shows in the fall, and this example should have been followed thereafter. The writer believes that much greater benefits would be derived from exhibitions if they were held early enough in the fall to secure pleasant weather and were held out of doors in some enclosure like a fair ground or automobile encampment. They could then be arranged to be seen in motion and the public at large would be more enthusiastic in the beautiful fall weather than they can possibly be in the chilly, stormy weather found in New York in January. If the show is to create enthusiasm among buyers, it should by all means be held out doors and not later than October and this disposition of the matter would destroy the objectionable feature of the yearly designation and do much to spread the business over the year both to the benefit of capital and labor, as the carriage business has been spread.—CHAS. E. DURYEA.

TOURING YOSEMITE

Los Angeles, Cal.—EDITOR MOTOR AGE—In a recent issue of MOTOR AGE the statement was made that Major J. Fulmer, of Los Angeles, was the first automobilist to fully tour the Yosemite valley. Major Fulmer's trip was made in July. Prior to that time my wife and myself drove into the valley with a Winton touring car, arriving at the Sentinel hotel May 3. The proprietor of the hotel will verify my assertion. The whole trip was an interesting one. We left Los Angeles April 8 for San Francisco, which we reached April 14. We left Frisco April 20, bound for Stockton, by way of Sacramento. Stockton was reached April 30 and on May 1 at noon we left it. We spent the night in a Chinese camp and the next day drove as far as Bower cave. The Sentinel hotel, Yosemite, was easily reached the next day. With the exception of fording the stream at the foot of the Cascade falls the car pushed its way under its own power throughout the tour of the valley. In this instance the water was so high that it covered the floor of the car and wet the baggage stowed in the tonneau. A team pulled us out of the stream.—A. N. JUNG.

SPEED IN NEW YORK

Buffalo, N. Y.—EDITOR MOTOR AGE—What is the legal speed limit for automobiles in country districts in New York state? We have had several arguments over the matter here.—C. E. SHAW.

The speed limit in New York state is 20 miles an hour on country roads, with certain exceptions which are enumerated in the synopsis of the present New York law published in MOTOR AGE of its issue of May 21, 1903.

GOTHAM'S TRADE CENTER

Nearly All the Metropolitan Concerns Forced To Enlarge—Plan Modern Structures for 1904

New York, Jan. 4—The Winton Motor Carriage Co. is the latest to move to the new automobile row on upper Broadway. The company last week moved its eastern branch to Broadway and Fifty-fourth street, where a new building had been erected for its use. The new place has many labor saving devices, including a turntable on the garage floor, the invention of Sterling Elliott, former president of the League of American Wheelmen. This table rests on ball bearings and is a convenient thing for turning vehicles after they are brought into the place. On the floor above there is a traveling crane for shifting machines and parts from one part of the workshop to the other. In the corner building are the offices, including the headquarters of Percy Owen, eastern manager. There is room enough in the corner for an elevated platform and on this platform will be placed a 1904 Winton, surrounded by twenty-six electric lights to more fully show the beauty of its design and finish. The new building next door, which is used as a garage, workshop and storage place, gives the concern a plate glass frontage of 103 feet on Broadway and enables it to have a sign 120 feet long. Under the sidewalk in front of the building is a five-barrel gasoline tank, which is the first one installed under the new laws secured through the efforts of the New York Automobile Trade Association. In the basement of the garage building is a place for storing machines, together with a chauffeurs' room. On the first floor, where the turntable is located, is ample room for storing about thirty-five Winton cars, the only kind allowed in the building. On the next floor is a stock room and repair shop. Here are placed four pits in the floor, fitted with incandescent lights, while under each work bench is a closet for the parts of the machines being overhauled. An electric elevator facilitates the handling of cars. Manager Owen believes that when the place is in full operation it will be one of the finest homes for power-driven machines to be found in the city. He expects to have a formal opening within a few weeks.

A car load of 1904 Wintons is being anxiously awaited at the new branch. Prospective buyers have been informed that the cars should arrive some day this week.

Ever on the alert to strengthen their position in the automobile trade, Smith & Mabley have secured the big building at Eighty-third street and East river, where they will manufacture the Smith & Mabley Simplex and incidentally give more attention to the building of automobile boats. The location is excellent for manufacturing purposes and the firm will have the additional advantage of being able to build boats and automobiles in the same building. New machinery and skilled workmen will give them one of the best equipped factories in this vicinity.

As a result of the good fellowship that reigns among the tradesmen in the vicinity of Broadway and Thirty-eighth street and in order to have a general meeting place to exchange ideas, there will be launched this week the Automobile Trade Club, with dues of \$10 a year and headquarters at some prominent

hotel. Knowing the value of exchanging ideas and feeling there should be some place where dealers could take their customers and friends to lunch, the idea of such a club has received almost universal endorsement. One of the hotels has offered a commodious meeting room for the club and, apart from giving a 25 per cent discount from its menu will give a luncheon each day at a special price, with special waiters for the service of club members.

P. H. Deming, the eastern manager of the White Sewing Machine Co., famed for his notable rides on big endurance runs, is about to take the most important trip of his life and one of which his countless friends will be glad to hear. It will be on the great road of matrimony and his companion, who will help him to keep on the proper course, is Miss Helen Smith, a young woman prominent in Detroit society. The pair will be given the word next week and then, as an incident to the greater trip, they will leave January 16 for a tour of Europe, in the redoubtable White steamer that Mr. Deming piloted so well on the Pittsburg endurance run.

On Friday a party of newspaper men will leave New York for a visit to the factory in Cleveland, where Winton cars are made. The invitation comes from the Winton Motor Carriage Co. and Percy Owen, manager of the eastern branch, has been busy for the past few days arranging the details of the trip. Saturday the party will go through the big plant, returning to New York Sunday.

Excellent results are reported from the use of Edison batteries in two Adams' express wagons that have been in service in this city for some time. They furnished the first test of the invention of power-driven machines for commercial use and the Rainier Co., to which the batteries were loaned, is well pleased with the results. Paul Lineberger told a MOTOR AGE representative that the batteries were expected to furnish much better service than anything now in use, and that apart from weighing 25 per cent less; there was no cleaning, no equalizing, no broken jars and no broken battery straps. Wagons fitted with the Edison battery cover about 40 miles on a single charge. The Edison people decline to sell batteries as yet, but they are sending samples to the various makers of electric vehicles with a view of having them thoroughly tested.

By changing its constitution and by-laws at the meeting last week the New York Automobile Trade Association has made its meetings open to all members, who will have entire charge of the association's affairs, instead of having the work done by an executive committee. President Owen believes this will result in an increase of enthusiasm to the meetings and bring greater influence to bear on important matters.

Agencies for Georges Richard-Brazier cars have been established in Pittsburg, San Francisco, Los Angeles, Boston, and Chicago. E. B. Gallaher says he is negotiating for a number of other agencies in prominent cities.

Frank Eveland, of Spalding-Bidwell Co., and Mr. Josephs, of the Auto Import Co., returned from the Paris show on the Majestic last Friday. On the St. Louis, arriving Sunday were E. T. Birdsell, of the Standard Automobile Co.; C. R. Mabley, of Smith & Mabley, and Norris Mason, of the Societe Franco Americaine d'Automobiles; Sydney B. Bowman, of Bowman Automobile Co., and Alden L. McMurtry.

COLORADO A GOOD FIELD

Conditions There Ripe for Big Automobile Trade According to Geo. W. Wood—Hartford Notes

Hartford, Conn., Jan. 4—George W. Wood, president and general manager of the Colorado Automobile Station of Denver, was a visitor to the city during the week, placing an order with the Electric Vehicle Co. for five large gasoline cars for immediate delivery and with more to follow in later months of the season. While in Hartford Mr. Wood talked entertainingly of automobiling in the western country. "If the strike that is now in force among the mine workers of our state is settled soon it will have no bearing on the trade conditions. If, however, it is not soon fixed up I fear that it will have a demoralizing effect upon the healthy condition of trade in the state. Just now we haven't felt any difference, but if the struggle is long drawn out and continued for any great length of time, I cannot but feel that there will be hardships in many lines of trade, and especially in our business. But I think that the cooler heads among both elements in the controversy will win out, and that the struggle will soon be over. That seemed to be the sentiment when I left home.

"There are 400 automobiles or thereabouts in Denver, or more than there are in all the state besides. Our experience was first with steam, then with electric, and now with gasoline. The steam vehicles were not popular after a year or two until last year, when the Stanley people sold some fifty cars. Inexperience counted in ruining many batteries in our section but I have picked up a good electrician and propose building a garage in the residence section for the exclusive care of electric vehicles, and I think this will cause a return of favor of this type of car. I start in with a large number of vehicles and think that the garage in this residence section will be a popular institution.

"We have had some trouble with gasoline vehicles in our section that the people of the east are not heir to. We are some 5,200 feet above the sea level and the air is thinner. It does not contain so much oxygen. We therefore have some little trouble with mixtures. This is not original with any one make of car but is experienced by all vehicles of the gasoline type. This year, however, the manufacturers of carbureters have paid attention to our conditions and we think they have done much to solve the question.

"No, the roads of Colorado are not so hilly as the easterners imagine. Seven and 8 per cent grades are common enough, but so they are in our eastern cities. I say our because I come from Pittsburg. It would actually take some time to find a 20 per cent grade. Of course there are such, but one doesn't strike them any more often than one would in making a tour of this eastern country. There are, however, quite a number of small grades. The need in Colorado is for a high powered car of light weight. The greatest amount of strength and light weight, coupled with good construction, is what we want.

"A great part of the state of Colorado offers a good field for the sale of gas cars and this is the field that I intend working this year. The managers of mines are men with large salaries, little opportunity for pleasure, and such men are generally possessed of a

love of nature and a touch of mechanical genius. The automobile offers them a fine plaything and when one is demonstrated to have hill climbing ability and general capacity they will purchase. The expensive touring cars are what they are after, too. To my mind there will be a great number of cars sold among these people during the season to come."

Mr. Wood says that there is little opportunity to sell high class vehicles of the brougham order. He did purchase one of these carriages, a Woods electric, for his own use, and there were several who thought seriously of purchasing, but afterwards decided not to. Women are large owners of carriages, particularly electric runabouts and surreys, and many of them are clever in the role of chaffeuse.

The quick shift of the bicycle men to the automobile game was again brought home to Hartford people when Henshaw, who formerly rode motor tandems for records with Hedstrom, visited the city in the interest of the Thomas car during the week, seeking an agency. The Olds field force was also in town during the week, and it is thought a new agency connection will be made, since S. A. Miner, who last year handled the Olds, has taken on the Knox.

John Lights, foreman of Brown, Thomson & Co.'s automobile department, has fixed up a delivery wagon for the firm from an old delivery wagon body taken from a Milwaukee steam wagon and using the chassis of W. P. Plimpton's Knox car.

Efforts are being made to sell the fire department an automobile, for the use of Chief Krug, by several agents and as a result the fire commissioners, six in number, are being taken to ride each afternoon. Former Chief Eaton, recently retired after more than 50 years of service, was opposed to automobiles and preferred to drive his faithful "old whitey," though he told the commissioners that he would go to fires with a bull, if they demanded it. That closed the incident. Chief Krug, however, is a crank on automobiles, as he puts it, and the commissioners cannot purchase one any too quick to suit him.

George M. Brown, who owns a number of cars, has purchased a new four-cylinder 40-horsepower Apperson Bros. car. This will be at the Boston show and will then be delivered to Mr. Brown, who will use it in tours of New England and about the White mountain country another year. Mr. Brown used the two-cylinder Apperson car in touring the White mountains last year, in which tour he made country where an automobile had never been seen, and where he was called upon at times to encamp in the open air over night with his party. Mr. Brown now owns a Haynes-Apperson runabout, an Apperson touring car, a Union runabout and a Columbia electric runabout. He has also purchased several cars for his brother-in-law, Dr. Lyman, of New York, and has been one of the largest individual buyers of automobiles for private use. For two weeks he has been at the Kokomo, Ind., factory of both the Apperson Bros. and the Haynes-Apperson Co.

CLUB REDUCES DUES

In order to encourage early applications for membership, the Chicago Automobile Club offers to receive new members during the month of January on payment of \$25, which amount will cover both the initiation fee and the dues for the first six months.

WINTER DEMONSTRATING

Buffalo Makers Give a Motor Age Man Fast Rides Through Blizzards—The Tale of Woe

Buffalo, N. Y., Jan. 2.—When an eastern tenderfoot member of the MOTOR AGE staff struck Bisonville this morning he thought he had run up against a pretty fair sample of the winter weather article. What looked to him to be a wind and snow blizzard seemed to be raging. At the Thomas factory and down at the Pierce office they didn't seem to think so. Mr. Thomas, good, hospitable Thomas, insisted on bundling the tenderfoot into one of the new three-cylinder cars, just to show him how well it could run. The wind blew a gale and blinded the luckless scribe with snow. The irrepressible juggernaut plunged through the drifts and tore through the snow at 30 miles an hour as though it were skimming over a park boulevard. A great respect for the power and speed of the new Thomas and two frost bitten ears were the net results to the tenderfoot of his run from the Thomas to the Pierce place.

"Oh; that's nothing!" cried Percy Pierce, as he opened the window for some snow and rubbed the visitor's ears with it.

"That's nothing," echoed Fred Nickerson. "Come out and take a ride with us in the Arrow. I pulled through from Binghamton the other day in a bigger snow storm than this."

"That's nothing," put in Mr. Clifton. "Go out with the boys for a little ride."

Once more the MOTOR AGE man faced the blizzard and became a party to speed law breaking, trolley car racing and foot passenger dodging. Those Pierce and Thomas people don't know it's winter. Really, they don't. They say automobiling beats sleighing. Perhaps it does when one is used to it. The MOTOR AGE tenderfoot isn't.

Fred Nickerson, who drove the Pierce pilot car in the endurance race, had a thing or two to tell about the recent snow bucking expedition he and F. S. Day had had. The two made a run in "Arrow No. 14" from Binghamton to Buffalo, a distance of 226 miles on the endurance race route, with 14 miles of detour added, in 2 days and a half. This is Nickerson's story in brief:

"There was about 16 inches of snow when we left Binghamton at noon on December 16," said he, "yet we covered the first 28 miles in an hour and ten minutes. Elmira, 63 miles, was reached that night. We got to Bath, 40 miles, at noon the next day. At Cohocton, 16 miles out, where there was so much trouble during the endurance run storm, the drifts and snow were so deep—6 feet in places—that we turned to the right and climbed the mountain, which is 1,780 feet high. At Wayland Junction we encountered snow 6 feet deep. It took us 3 hours to make the 2 miles into town. We had four men shoveling while we two pushed. We would back and then go into the drifts, after the manner of a railroad snow plow.

"It was still storming the third day. The snow was so deep that it took us an hour to go 7 miles down hill into Dansville. Here it stopped snowing. At Geneseo, however, it began to storm again. Mr. Day had to constantly get off and shovel a path. At Corfu he fell from the step, where he was standing, in a faint. It took me 20 minutes to bring

him to. I tell you I was pretty badly scared. We finally got into Buffalo at 5 o'clock the third afternoon. Not a thing went wrong with the machinery. The people had not forgotten the endurance run. When they saw us they concluded some new kind of winter test was in progress and asked us how many more were coming."

Out at the Thomas factory most of the talk was of the 1904 three-cylinder car.

After a look at the new chassis and after the demonstrating car's easy run through the snow the enthusiasm of Mr. Thomas and Mr. Schultz over next year's model was readily understood. Another MOTOR AGE man had been a previous visitor and had gathered its data.

Motor cycles will receive much attention at the hands of the company the coming year. Edwin L. Thomas, a son of E. R. Thomas, who has been studying the two-wheel motor problem for 3 years in Europe and this country, is now in charge of this branch of the business. He had drawings of the 1904 model to show.

Mr. Thomas is building a 24-horsepower auto boat and expects to make this a notable branch of his manufacturing business.

BOSTON TRADE DOINGS

Boston, Jan. 2.—Every inch of available space has been disposed of by Manager Campbell for the automobile show of the Boston Automobile Dealers' Association, to be held in Symphony hall next March. Manager Campbell says the show will be more of an international affair than ever and will prove of considerable value in educating the Bostonians to what is best in the automobile world. The show will also make it possible for the local followers of automobiles to see the latest creations in motor vehicles without having to travel to the New York shows.

Charles E. Fay, formerly Philadelphia manager for the Hartford Rubber Co., has severed his connection with that concern and is now located with Harry Fosdick at the Winton branch in Boston. Mr. Fay is well known to the Boston trade, having been engaged in business in this city for many years. The first 1904 Wintons arrived during the week and were placed on exhibition on the salesroom floor of the Winton garage.

A. E. Morrison is full of business booking orders for the four-cylinder Peerless and also in finishing the preliminary arrangements for his new garage, which is to be constructed on Ferdinand street.

George H. Lowe, of the White company, has his eyes on a fine piece of land on Boylston street, near the Massachusetts club house, which he is endeavoring to secure as the site of his new garage.

RECENT INCORPORATIONS

Owners' Automobile Co., St. Louis, Mo.; capital stock, \$2,000. Incorporators, Horace A. Davis, William C. Woods, George L. Moselle.

Gate City Motor Car Co., Omaha, Neb.; capital, \$10,000. Incorporators, J. E. Baker, L. H. Ayer and E. R. Baker. To manufacture automobiles.

The Rambler Automobile Co., of Hatboro, Pa.; capital, \$5,000.

Lee Automobile Co., of Portland, Ore.; capital, \$1,000. Incorporators, Don M. Lee, Charles G. Briggs, Howard H. Holland.

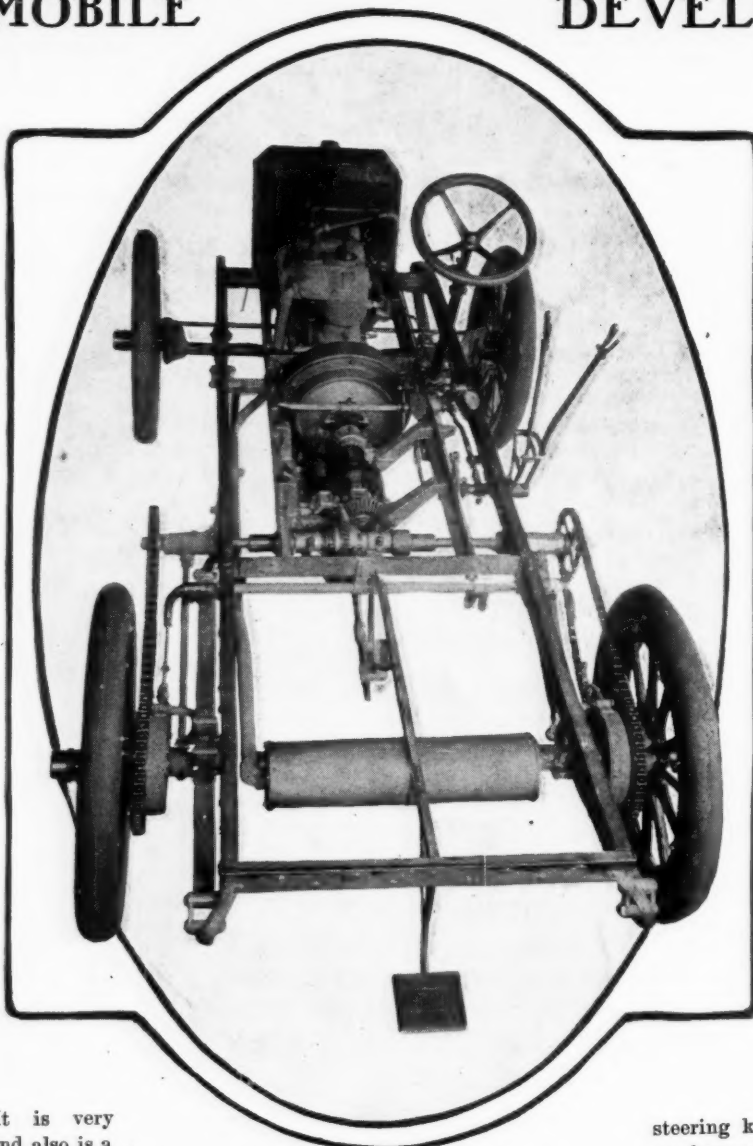
AUTOMOBILE

DEVELOPMENT

Having entered the motor industry as maker of motor bicycles, it was natural that the first automobile built by the E. R. Thomas Motor Co., of Buffalo, N. Y., should be a small, light machine, having much of bicycle construction in its make-up. Then came a light runabout with the popular single-cylinder, horizontal motor under the body of the car; and then the Thomas with which most people are familiar, the single-cylinder, light tonneau car of last season. The latter made a hit at the shows last year on account of combining runabout simplicity with greater strength, touring car lines and greater carrying capacity.

But while it was, during 1903, generally known as the maker of such cars, the company itself had a greater ambition tucked up its sleeve, and was quietly working out plans for a car of much greater pretension. A careful survey of the industry was made, and the result, coupled with the company's own experience, brought about the designing of a car which the maker feels sure is of a style and pattern that will be most popular this year—an ample powered, light car, with multiple cylinder motor in front under a bonnet a la mode. It is Model 22, surnamed the "Flyer." It is very much larger than the earlier cars, and also is a radical departure from the previous Thomas cars, but here and there in its construction are noticeable the evidences of the company's experience in the manufacture of other cars, and even are seen traces of things constructional learned in motor cycle building. The latter class of construction, incidentally, is not bad training for automobile manufacture, for the building of a good motor bicycle brings out many methods and processes of refinement which might be overlooked in the exclusive production of machines of a larger growth, in which a pound of metal or a foot-pound of power wasted does not matter so much.

The distinctive feature of the car is its



MOTOR AGE

The Thomas Chassis

three-cylinder, upright motor; not new, of course, but almost unique in American cars of this class, and previously most advocated in America by that prince of opinionists, Charles E. Duryea. The adoption of this kind of motor is not due to a desire to be peculiar, however. Almost a year ago, when the designing department was first instructed to cast about for ideas for this car to be, the selection of a general type of gasoline motor was laid out as its first work. A direct study of the question of motor cylinders, together with notation of the fact that several of the best and longest experienced builders of Europe, both British and continental, had adopted the three-cylinder motor with plain success, decided the matter, and the car began to exist. As a foremost representative of this type of construction in America its performance during 1904 ought to be watched with interest for this, if for no other reason.

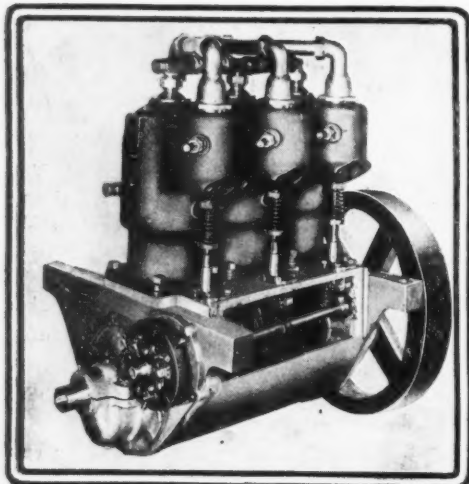
Between the considerations of motor distinction and chassis construction, factor by factor, there appears as a second general characteristic, the constructional aim throughout to increase power and reduce weight. The result is a car whose weight is 2,000 pounds and whose motor is rated at 24 fully developed horsepower.

The main frame of the car is a compound affair, plainly the result of an endeavor to secure the advantages of several styles of construction. In a straight side view it closely resembles a pressed steel frame, rivet heads

only distinguishing it. Structurally it embraces rolled plate steel and angle steel. Each side bar comprises a 10-gauge flat steel plate, 3 inches wide in the center and tapering to 1½ inches wide at each end, where it is curved downward to form the spring support, its curve corresponding to that of the spring, and its end being provided with a forged spring hanger. To the inside of this plate are riveted two 1¼-inch angle steel bars, facing each other so that the general section of the composite structure is that of a channel iron. There are three main cross bars; one across each end, of course, and one slightly back of the middle of the frame. Between this bar and the front bar extend two longitudinal 2½ by 1½-inch angle bars that form the sub frame upon which is placed the motor and transmission gear case. Two short cross bars extending respectively from the center of each side of the sub frame to the main side bars and a longitudinal bar from the middle to the rear cross bar, complete the frame structure. The frame is closely riveted and all corners are structurally braced.

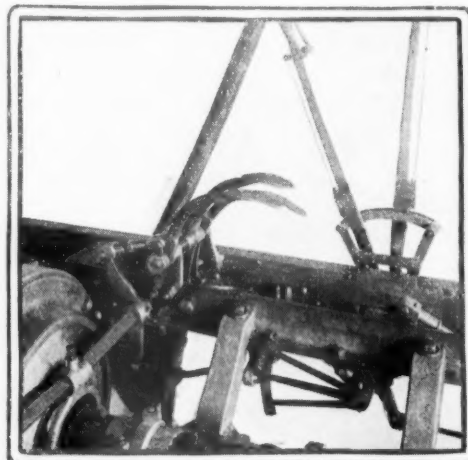
Both the front and rear axles are of steel tubing, 2¼ inches in diameter and of 8 gauge. The steering knuckles are of the jaw pattern and are heavy and with carefully executed bearings. The steering connections are all extraordinarily heavy and rigid. All the wheels run on wide Timken roller bearings of 2½-inch outer and 2⅞-inch inner diameters, respectively. The wheels are of the wood, artillery pattern, 32 inches in diameter and fitted with 4-inch double tube, detachable tires. The wheel base is 84 inches and the tread 56½ inches.

The motor is of the aluminum alloy crank case style with individual cylinders bolted to it. In each, the cylinder and head are integral. The water space between the cylinder wall proper and the outer, or jacket wall, is of more than ordinary width. The inlet and exhaust valves are on the same side of the cylinder, the inlet valve being atmospherically



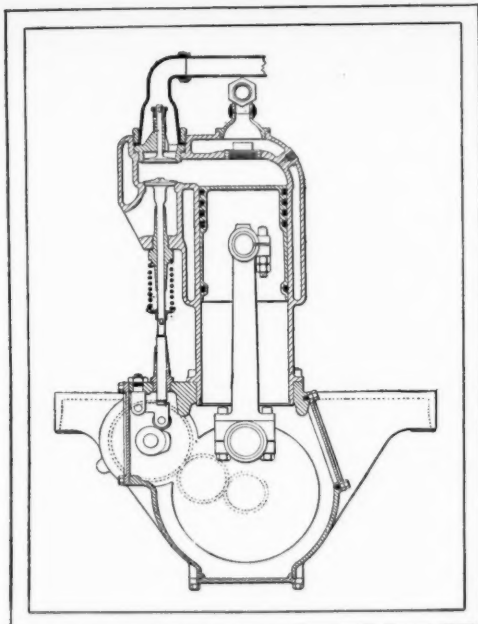
The Thomas Motor

MOTOR AGE



MOTOR AGE

Thomas Clutch Interlocking System



Section of Thomas Motor

MOTOR AGE

operated and being directly above and in line with the exhaust valve, which, of course, is operated by the usual cam and lifter device, the cam shaft and lifter rod rollers of which are enclosed in the crank case. It is said that great care is exercised in the fitting of the inlet valves and springs, and that each valve, before being inserted, is tested to open its regulation lift of 3-16-inch under exactly 1 pound pressure.

The sparking plug screws into the side of the cylinders, so that its points are directly between the inlet and exhaust valves, and consequently in a good path for self-scavenging by virtue of the rush past it of the gases. A single pipe leads upward from the carburetor and branches into a 3-way horizontal Y over the top of the motor, one branch extending to each inlet. The exhaust piping is on the other—left—side of the motor. The pipe from the foremost cylinder extends obliquely downward and then directly back to the muffler, while the lead from the other cylinders extend substantially straight down to this main pipe.

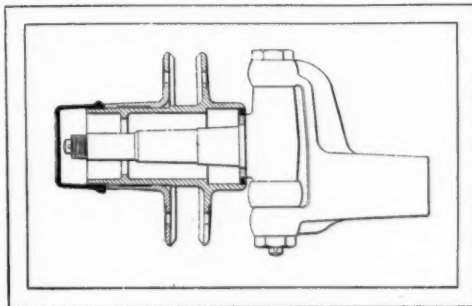
The cylinder bore is $4\frac{1}{2}$ inches and the stroke $5\frac{1}{2}$ inches. The stated 24 horsepower is said to be taken at a motor speed of from 900 to 950 revolutions per minute.

The motor has four crank shaft bearings, the outer two of which are lubricated by chain oilers, while the inner ones and the piston and connecting rod bearings are lubricated by the splash system. The crank shaft is a forging. The crank pins are hollow, of large diameter and with large fillets in the corners. The connecting rods are of cast steel, with bronze and babbitt bearings. Each piston has five rings, four as usually disposed at the upper end, and the extra ring at the bottom to assist in balancing the piston and to act as a piston oil retainer.

The water circulation is by means of a directly gear driven, gear pump. It passes from the cylinder heads to the radiator, from the radiator to the pump and from the pump to the lower portion of the water jackets. The radiator draft is accelerated by a fan, belt driven from the motor shaft. The water system is fitted with a small by-pass through which water may be turned to circulate around the force feed lubricator on the dashboard. This is a convenience for cold weather, to prevent the oil from becoming stiff. An ordinary cock allows this supplementary channel to be

closed or opened at will. The fly wheel, in addition to the usual key fastening, is provided with six flange bolts, which render its connection with the motor crank shaft peculiarly rigid.

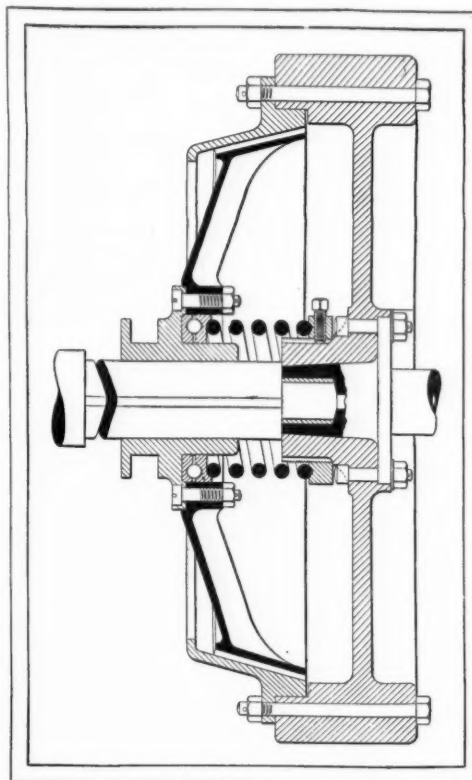
In the construction of the motor cylinders the experience and practices of the Thomas company in motor bicycle manufacture crop out. It is almost necessary to high efficiency in a small, high-speed, air-cooled bicycle motor that the working parts be ground and lapped. This process is carried out in the automobile motor cylinders and all running parts; even the piston rings are both ground and lapped. The whole finishing of the cylinder castings is a systematic process. Each cylinder is bored, turned and faced, and is then placed in a universal jig which allows the drilling of all the holes without its removal or change of position, the jig being made so that it may be shifted from one position to another to allow the drilling of different holes. The machining of the cylinder extends even to the upper face of the bolt flange by which it is held to the crank case, this being faced that the bolt heads may have true seats and thus be rid of any tendency to draw the cylinder out of alignment.



MOTOR AGE

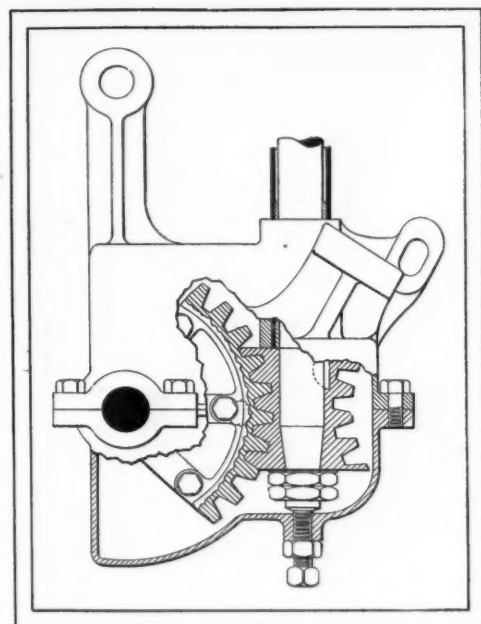
Thomas Front Wheel Hub

The transmission gear is of the sliding gear variety, with a direct drive on the high speed that is not only direct but direct without the running of the idler gears. It furnishes three forward speeds and a reverse drive. The clutch is contained within the fly wheel, and avoid-



MOTOR AGE

The Thomas Fly Wheel and Clutch



MOTOR AGE

The Thomas Steering Gear

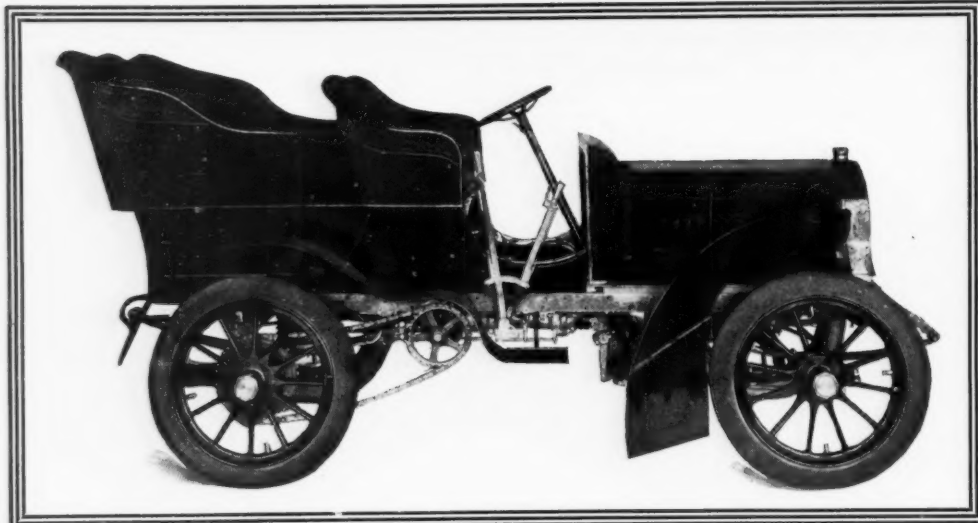
ance of thrust is the chief claim made for it. Between the clutch and the transmission gear is a universal joint, so that the action of the clutch is entirely independent of the gear and throws no strain upon it.

The main shaft of the transmission set is the usual squared shaft, driven by a sliding jaw clutch from the stub shaft extension of the clutch shaft. This extension shaft carries the spur pinion which drives the secondary gear shaft, upon which are the different spur gears to furnish the two low speeds, and the reverse drive through the usual idler pinion. By the action of a small gear sector and spur gear rack, co-operating with the sliding gear shifter, when the hub that carries the two sliding gears is brought into contact with the jaw clutch member of the driving shaft, the first spur gear on the secondary shaft—which meshes with this gear to furnish the main drive for the low and reverse speeds—is drawn out of engagement with the pinion of the driving shaft and the main shaft runs directly with the motor shaft, all gears being out of mesh.

The drive from the main shaft is by bevel pinion and gear to a cross counter shaft from which the final drive is taken by double side chains, these being $\frac{1}{2}$ -inch Diamond roller chains of 1-inch pitch. The end bearings of the transmission gear set are lubricated by chain oilers, while the inner bearings and the gears and other working parts are oiled by splash, the aluminum gear case being oil and dust tight. It is fitted with a hand hole on top, so that the gears may be inspected without removing the entire upper half of the casing. The cross counter shaft is fitted with universal joints, and runs on Hyatt roller bearings $2\frac{1}{4}$ inches in diameter and $7\frac{1}{2}$ inches long. The bevel gears are provided with ball thrust bearings to take care of side stress. The spur gears are of No. 6 pitch and of 1-inch face, while the bevel gears are of $1\frac{5}{8}$ -inch face.

The final drive is so arranged that the chain line on each side is within the scope of the $9\frac{1}{2}$ -inch roller bearings in each rear wheel. This feature in another unmistakable evidence of motor cycle building, in which it is recognized good practice to get lines of power application within bearing centers.

The brake system comprises four double acting brakes, two on the counter shaft and



MOTOR AGE

The Thomas Touring Car

one on each rear wheel. The counter shaft brakes are operated by a pedal and their application disengages the clutch simultaneously. A further interlocking system provides that the application of the emergency brake side lever applies all four brakes and disengages the clutch. The clutch is individually operated by a pedal and a still further interlocking system, in connection with the gear shifting lever, prevents the engagement of the clutch until the gears are properly in mesh, even though the foot be lifted off the clutch pedal. The speed ratios of transmission, determined upon the basis of final drive of a twenty-two to a forty-tooth sprocket, are: Direct drive, thirty to eleven; middle speed, fifty to eleven; low speed, 100 to eleven; reverse, 250 to eleven. A speed of 40 miles an hour would by this reduction be given at a motor speed of about 1,000 revolutions.

The steering gear is of the Hindly pattern of four-lead worm and gear sector, furnishing a rotary reduction of two to one. It is, of course, enclosed, and is provided with a double take-up for adjusting in both directions. The main gasoline reservoir, a tank of 15 gallons capacity, is placed under the seat. This supplies a small tank in front of the dashboard, from which the supply is direct to the carbureter. The muffler is large and is provided with a "cut-out."

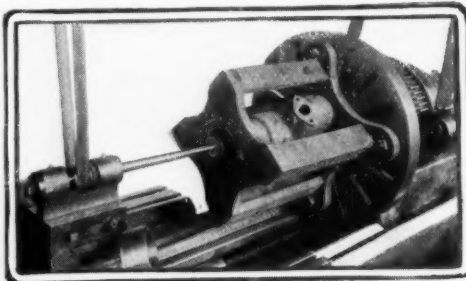
In body design the car is in keeping with its construction. The bonnet is of the double-bevel, square style, while the dash is of the new overhanging variety, with curved top and sides. The tonneau is wide and high and has roomy seats for three persons. All of the upholstery is deep and comfortable. The finish is not radical, the chief consideration being said to be excellence of execution.

WRIDGEWAY'S NEW CARBURETER

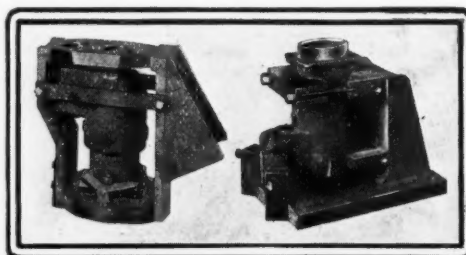
Charles G. Wridgway, manager of Banker Bros. Co.'s New York branch, has designed a carbureter of the float feed spraying type which has many good points to commend it. The float chamber and mixing chamber are cast in a single piece. The sheet metal float acts on the gasoline needle valve through the intermediary of two balance levers, thus allowing the valve to close downwardly. The gasoline supply pipe connects to the float chamber at the bottom by means of a union with conical seat.

Within the cylindrical mixing chamber is arranged a throttle valve. The main air inlet to the mixing chamber is in the cylinder wall at the side, and the gas outlet on top, directly

above the spray nozzle. The throttle valve obturates both the main air inlet and the gas outlet simultaneously. The throttle valve has a stem passing through the head plate of the



Grinding a Cylinder



MOTOR AGE

Jigs for Finishing Cylinder

mixing chamber, to which is pinned a lever arm for operating it. An auxiliary air inlet is formed in the head of the mixing chamber. Both the head plate of the chamber and the

head of the drum have openings in them and these openings can be more or less obturated by means of the perforated plate to which is secured the lever arm. If for any position of the throttle valve the mixture should not be of the correct proportions it can be corrected by means of the auxiliary air valve.

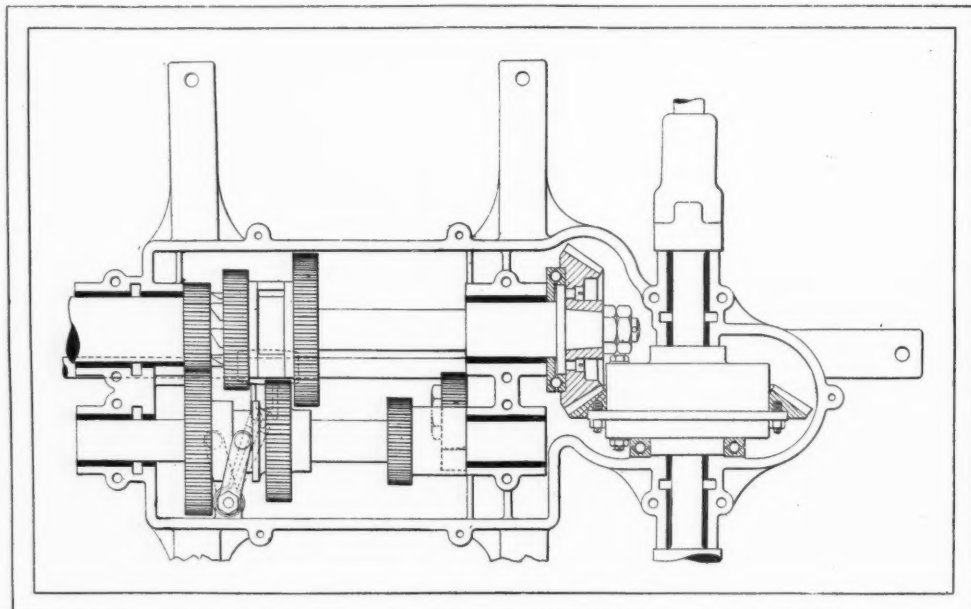
Mr. Wridgway intends to cast a jacket around the mixing chamber in the future, through which the cooling water is to be circulated, to facilitate vaporization of the gasoline.

THE DAWSON TOURING CAR

Chicago, home of freaks in automobile construction, this year offers an automobile that is by no means a freak, but a simple car of the light touring order. This is the Dawson, made by the J. H. Dawson Machinery Co., Canal and Washington streets. The car is of medium weight and power and is not large, but it is fitted with wide high back seats, and a tonneau of a depth unusual in cars of the size. In its construction the company has not attempted to secure the greatest possible speed, but instead has worked along the lines of comfort and simplicity, the latter both in construction and operation. It was built for the general public, for the persons who do not care to know any more than is necessary about the mechanical side of automobiling.

The running gear is of angle steel. Its principal point of distinction is the bracing of the corners with triangular plates of ample dimensions. The frame is supported by semi-elliptical springs and the wheels run on roller bearings. Both axles are strong. The rear axle is of the divided live pattern, fitted with a spur gear differential. The distance or radius rods for determining the rear axle position are out of the ordinary arrangement. They extend from the axle fitting to the hanger for the front end of the rear spring, instead of to a special hanger further forward on the frame, as is customary. This construction allows the rod to be short and of simple adjustment.

The motor is of the double-cylinder upright pattern, rated at 15 horsepower. It has an aluminum alloy crank case and individually cast cylinders. All of the valves are on one side, and all are mechanically operated from the same cam shaft. The spark plugs are on the top of the heads, above the respective in-



MOTOR AGE

The Thomas Transmission Gear

let valves. The lubrication is by the splash system, with the oil supply from a gravity sight feed on the dash.

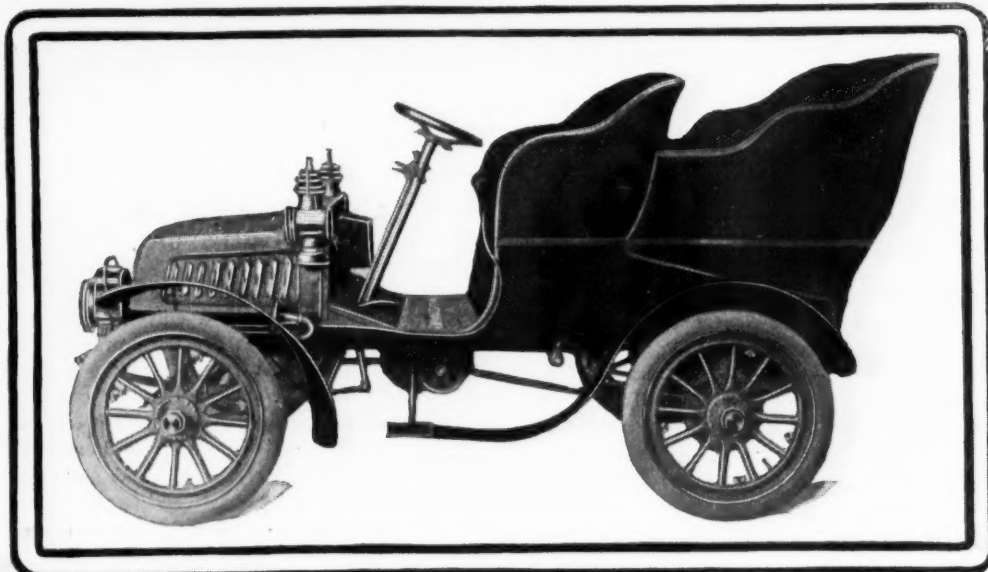
The motor, instead of being placed with the crank shaft longitudinally of the vehicle, is placed crosswise and is connected to the transmission gear by a chain, the shaft of the transmission gear being parallel with that of the motor.

The transmission gear, which furnishes two speeds ahead and a reverse drive, is simple and peculiar to the car. It comprises a main shaft, upon which is a sleeve and two face clutches. The projecting end of the shaft carries the sprocket over which runs the drive chain from the motor, while the sleeve carries a final drive sprocket for the chain running to the sprocket on the rear axle. The secondary shaft carries the low speed reducing spur gears, and a sliding pinion adapted to mesh with an idler to furnish the reverse. On the main shaft is a spur gear which normally meshes with this sliding pinion, while on the other end of the shafts are gears connecting the secondary shaft back to the main shaft sleeve. When the sliding pinion is in mesh with the main shaft gear, and the low speed clutch is thrown into engagement, the drive is through the secondary shaft. When the same clutch is in engagement, but the sliding gear is moved to engage the idler pinion instead of the main gear, the reverse drive is in effect. The high gear is obtained through the other clutch, which couples the shaft and sleeve to rotate together, giving a direct high speed drive.

There are no side levers. The speed changes are operated by means of a hand lever on the steering wheel pillar, while the sliding gear to give the reverse drive is brought into that driving position through a heel pedal. There is a brake on the transmission gear and one on each rear wheel. Both sets of brakes are operated by pedals. The only other controlling mediums are the small handles for the regulation of the throttle and spark lead. These are on the steering wheel pillar.

The gasoline tank is under the driver's seat, being supported by a light frame extending from the rear side of the sub frame to the cross rod actuating the rear wheel brakes. The water circulation system is of the customary pump forced character, and includes the recently introduced Long radiator, peculiar because of its crimped, continuous spiral rib.

The whole car is strongly and well made and is free from delicate mechanism. It ought



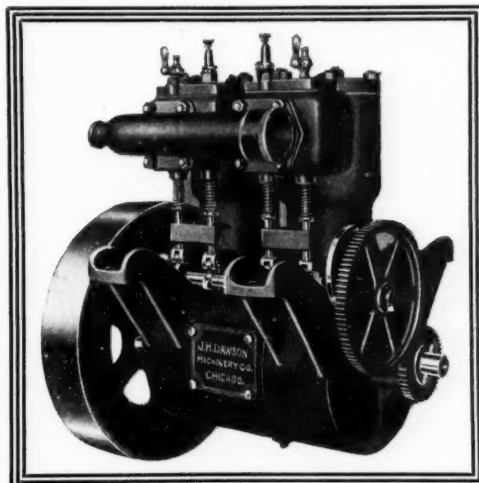
MOTOR AGE

The Dawson Touring Car

to be able to stand up well under rough usage. The finish and equipment are first-class.

A SELF-STARTING MOTOR

A gasoline engine that can be started by simply pressing a button is a new invention for which Edward Rathbun, of Toledo, O., has applied for a patent. The inventor made



MOTOR AGE

The Dawson Motor

his experimental engine in the shops of the S. M. Jones Co., and Mayor Jones has a half interest in the invention. The details of the construction of the engine will not be made

public until the patent is granted, but some information has been given out to show what it will do. The engine is a vertical two-cylinder, and the principal point is that it is self-starting. It is designed primarily for automobiles, and can, after having once been started in the morning in the usual manner, be shut down as many times as necessary and started again by simply pressing a button. In one of the cylinders there is always a charge ready for ignition or explosion, and the dead center is always avoided.

While the engine cannot stand for an unlimited time and then be started by the button, as the charge escapes after a certain time, it is claimed that for all practical purposes, such as a day's work, it can be started by pressing the button.

Plans for a factory are being discussed, and it is probable that delivery wagons equipped with the new engine will be built.

TRADE BRIEFS

The Porter Battery Co., of Waukegan, Ill., is removing its plant to Chicago, where it will have larger and better facilities.

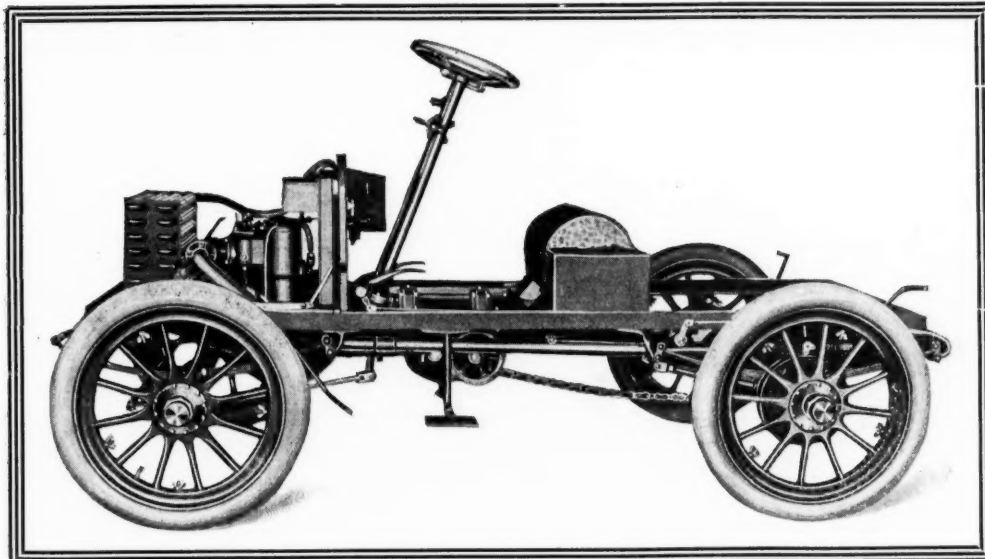
The Queen City Automobile Exchange Co., of Buffalo, N. Y., will handle the White touring car and the Orient Buckboard this year.

The Dallman & Cooper Supply Co., of Fond du Lac, Wis., has made one touring car and considers it so good that more will be manufactured.

The Hendee Mfg. Co., of Springfield, Mass., will manufacture both the Indian bicycle and the Indian motorcycle, 1904 models, and can make immediate deliveries.

The automobile dealers of Minneapolis, Minn., will have an exhibit following the horse show January 18 and 19. Prizes will be awarded for the best cars of different styles, and also for the best exhibition of operation. The show will be held on Nicollet avenue and will be in charge of R. F. Jones.

Githens Bros., of Chicago, have purchased the Oldsmobile Co., of Wisconsin, and will assume charge of the store in Milwaukee about the first of February. It has not yet been decided who will have charge of the Milwaukee office, but a local man will probably be appointed. The Githens brothers, Walter L. and Herbert, now own practically all of the stock of the Githens Bros. Co., and the management of the Chicago and Milwaukee offices will be directly under their control.



MOTOR AGE

Chassis of the Dawson Car

MOTOR PATENTS REVIEWED

DETACHABLE CLOSED TOP

Letters patent No. 747,937, dated December 29—Henry L. Call, of Chicago.—Claim 6—The combination with an open vehicle comprising running gear, springs and an open body mounted thereon, of a closed top having an open bottom and comprising top, front, rear and side walls, a frame for supporting the closed top comprising portions extending beneath the vehicle springs and integral portions extending laterally beyond the sides of the body of the vehicle, means engaging the vehicle springs for securing said frame thereto, and means for removably securing the side walls of said closed top to the portions of said frame which project beyond the sides of the vehicle body.

MOTOR COOLING SYSTEM

Letters patent No. 748,001, dated December 29—George McCadden, of St. Cloud, Minn.—Claim 4—The combination with the cylinder of an engine and its convex crank casing, a short tubular part mounted upon the convex portion of said casing and communicating with the interior thereof, a hood embracing two sides of, and mounted at an angle to said tubular part, and arranged to direct currents of air upwardly upon the cylinder, and oil downwardly, and a device for collecting lubricant disposed below the hood and outwardly of the casing.

IGNITION DEVICE

Letters patent No. 748,011, dated December 29—Wolcott Remington, of Stamford, Conn., assignor to the International Power Vehicle Co., of Stamford, Conn.—Claim 3—In an explosive engine, the combination with an engine cylinder, having an induction port therein, a piston head uncovering the said port, and carrying a deflecting flange to one side of its center and opposite the said port, a head upon the cylinder having a recess therein with a rounded bottom, located above the flange, a firing tube opening into a side wall of the recess and extending therefrom at an angle to the line joining the recess and flange, a hot surface contained in the firing tube, and means for moving the said surface axially in the said tube.

TWO-CYCLE MOTOR

Letters patent No. 748,029, dated December 29—Herbert G. Underwood, of Stamford, Conn., assignor to the International Power Vehicle Co., of Stamford, Conn.—Claim—In an explosive engine, the combination with an explosion cylinder, having a closed forward end and an explosion head, a piston head in the cylinder, a valve controlled air induction port at the rear end of the cylinder, a passage therefrom to the forward end and a piston controlled air passage connecting the rear end of the first passage and the cylinder, and extending around the piston head.

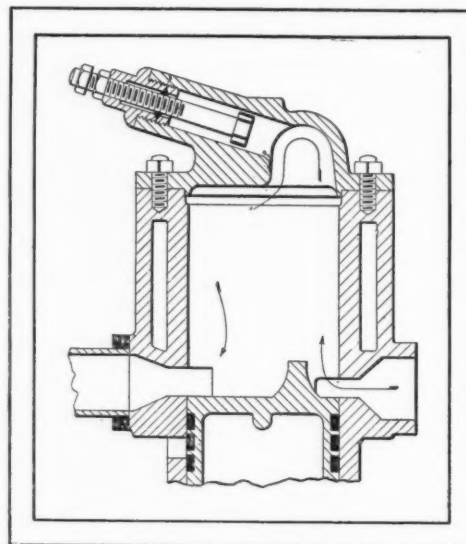
ROTARY VALVE MOTOR

Letters patent No. 748,045, dated December 29—William M. Britton, of Columbus, O.—Claim 1—In an internal combustion engine the combination with a plurality of power cylinders, each of said power cylinders having an exhaust outlet and combustion chamber communicating therewith, a crank shaft, pistons in

said cylinders connected with the cranks of said shaft, of hollow rotary valves adapted to communicate at each revolution with the interiors of the combustion chambers, a rotary shaft operating said hollow valves, cams on said shaft, exhaust valves for the power cylinders, fulcrumed exhaust valve operating levers having their outer ends adapted to contact with said shaft cams and their rear ends adapted to impart opening movements to said exhaust valves, means for supplying air and gasoline under pressure to said hollow valves and means for igniting the combined gasoline and air within said combustion chambers.

ELECTRIC CAR DRIVE

Letters patent No. 748,015, dated December 29—Charles E. Roberts, of Oak Park, Ill.—Claim 1—The automobile provided with a mo-



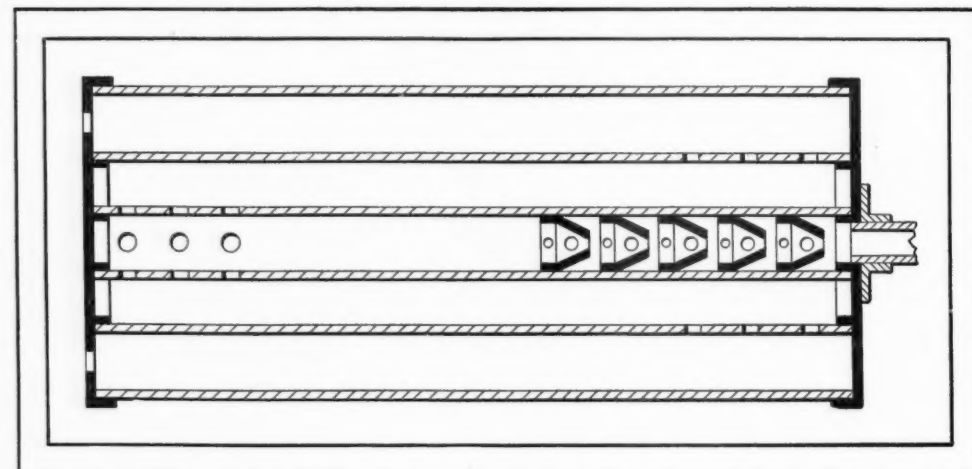
MOTOR AGE

Letters Patent No. 748,011

tor rigidly supported from the axle, a pinion for actuating the wheel also rigidly supported from the axle, and a single power transmitting device of an elastic nature connecting the motor shaft with said pinion.

TUBULAR MUFFLER

Letters patent No. 748,157, dated December 29—Samuel Bouton, of Salem, Mass.—Claim 4—In a noise muffler, a series of concentric tubes of different diameters, two heads to which the opposite ends of said tubes are respectively fastened, one of said heads provided



MOTOR AGE

Letters Patent No. 748,157

with an inlet orifice opening into one end of the innermost tube of said series of tubes, the other of said heads provided with outlet orifices opening out of the annular space adjacent to the outermost tube of said series of tubes, the inner tubes of said series provided with orifices opening alternately from one into the other at opposite ends thereof, and a series of truncated cones located within said innermost tube, the apexes of said truncated cones pointing toward said inlet orifice.

CONTROLLING GEAR

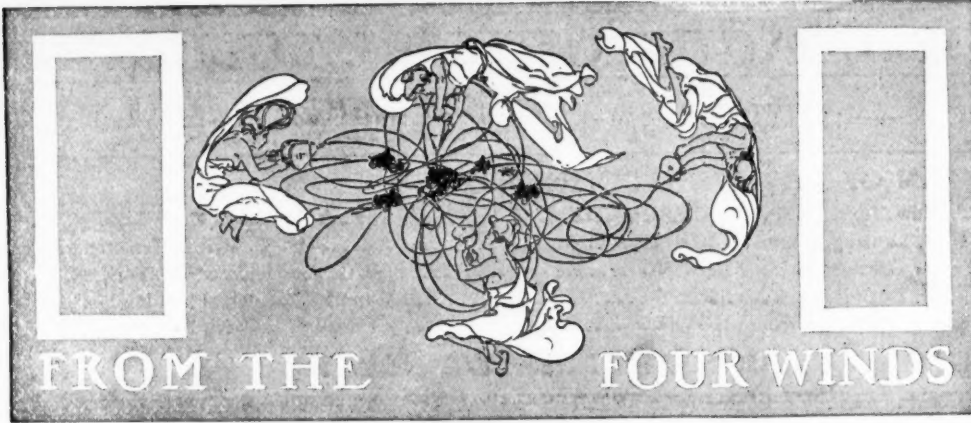
Letters patent No. 748,252, dated December 29—Sven J. Anderson, of Winchester, Mass.—Claim 2—In a vehicle, the combination of a controlling post having a rotary or twisting controlling movement and a universal swinging movement, frictional locking means in continuous connection therewith for supporting said post against said universal movement, and connections for transmitting the rotary movement of said post to the vehicle controlling mechanism.

DRIVE CHAIN COVER

Letters patent No. 748,275, dated December 29—Stuart E. Freeman, of St. Louis, Mo.—Claim 1—A motor vehicle comprising an axle operatively connected to a motor to be driven thereby, a casing for said axle arranged to act as a beam and constituting part of the frame of the running gear, said vehicle comprising a member extending from the axle casing to the motor shaft or frame for positioning said shaft, and said member being arranged to increase the mechanism for transmitting power from said motor to said axle.

SLIDING GEAR

Letters patent No. 248,334, dated December 29—Vincent G. Apple, of Dayton, O.—Claim 1—In a device of this character a driving shaft, a shaft element to be driven, a bodily-stationary primary driven shaft element interposed between the driving shaft and the shaft element to be driven, variable gearing connections between the said primary shaft element and the shaft element to be driven, operating means for varying said gearing connections, a clutch member carried by the driving shaft, a bodily movable clutch member arranged to coact therewith, means connecting said movable clutch member and the primary shaft element for rotation, and means interposed between the movable clutch member and the operating means for automatically disconnecting said clutch members during a movement of said operating means to vary the geared relations of the primary shaft element and the shaft element to be driven.



The Indiana Automobile Club has increased its capital stock from \$25,000 to \$30,000.

The Cortland Automobile Co., of Syracuse, N. Y., has been purchased by Arthur W. Davis, of Ithaca.

The first motor cycle club of Berlin was formed December 16 and has about forty members.

The George N. Pierce Co. is reported to be building a 55-horsepower racer for next season's track circuit.

Kenneth A. Skinner, the American de Dion agent, arrived on the Kronprinz Wilhelm last week from his visit to the Paris show.

A French woman motor cycle driver has issued a challenge to all French motor cycle drivers for a race over a distance of about 31 miles.

C. S. Partridge had a formal opening last week of the new shop room of the Standard Automobile Co. on West Thirty-eighth street, New York.

The Automobile Club of America gave a holiday smoker last week, whose main attraction was a high class professional vaudeville entertainment.

It is said that a Georges Richard car of high power and speed is to be shipped to this country for competition in the Florida races and on the track circuit next season.

At the annual meeting of various Belgian motor bicycle clubs, held in Brussels, it was officially announced that the total membership of the clubs had reached the 950 mark.

All the steam fire engines presently used by the fire department of Frankfort-on-the-Main, Germany, will be replaced with gasoline engines, which means an outlay of \$15,000.

M. de Brou, business manager of the de Dietrich factory, is the first soldier in the French army to complete the entire period of his yearly 28 days of service as an automobilist.

An omnibus service has been inaugurated between Leipzig and Marseburg, Germany, a distance of 16 miles. Each of two busses has a 12-horsepower double-cylinder motor and seats twelve passengers. The route is generally covered in 90 minutes, although there are fifteen stops. The fares vary from 5 to 25 cents, the latter being the charge for the entire distance.

A reduction of 33 per cent is made on children's fares and a similar concession is granted workmen, provided they buy twelve tickets at a time. Each bus covers the distance eight times during the day.

A German chauffeur was fined \$15 each in three cases. He appealed and was then sentenced to 2 weeks in jail. Before this sentence was finished the chief of police ordered his license revoked for one year.

A number of Belgian automobile manufacturers have complained to the government because the Dutch customs authorities refuse to let Belgian commercial cars cross the frontier, because they claim they spoil the roads.

Under the title of "A Little History," Thomas B. Jeffery & Co., of Kenosha, Wis., have issued a little booklet, giving a complete history of the New York-Pittsburg endurance run, and particularly the part played by the Rambler cars.

The contest committee of the Automobile Club of America has announced March 15 and 16 as the dates for the second annual test of commercial motor vehicles. No route has been decided upon, but last year's course will probably be used again.

The new building of the Hayden-Croninger Automobile Co., at 1337 Michigan boulevard, Chicago, is almost completed and will be ready for occupancy by the middle of the month. This company will handle the National electric and a new gasoline light car that is just coming on the market.

The value of motor cycles exported from Great Britain during the year 1902 was \$761,166, while machines imported are valued at \$4,861,922. Of this amount over 80 per cent is credited to France. Parts were exported to the value of \$82,334, while the importation amounted to \$543,096.

A vice president of the American Motor League calls attention to the maps published by the United States Geological Survey, which cover the more prominent portions of the United States and are sold at exceedingly low prices, running from 5 to 50 cents each. It is a great convenience to have an accurate map of one's locality, not only giving all the roads, but giving the contour of the ground, thus showing the grades of the hills. For touring purposes, at slight cost, one can secure accurate maps of the territory to be traversed, as well as the grades to be met, which adds much to the pleasure and profit derived from the

tour. Full information as to these maps with their prices can be secured free of charge by addressing "Director United States Geological Survey, Washington, D. C."

The Automobile Club of Wilkesbarre, Pa., has elected the following officers for the ensuing year: President, Charles Bertels; vice president, C. L. Davis; secretary and treasurer, Laning Harvey.

According to a gentleman who visited Thomas A. Edison at his factory recently, the famous inventor expressed the opinion that sooner or later automobiles would not have to be shod with expensive pneumatic tires, and that he had under consideration a rim of wood that would answer all purposes, the body of the car being swung on softer springs.

At the recent congress of Belgian automobile clubs it was decided to urge the minister of finance to change the regulation concerning the numbering of cars and carrying of lamps, and make it compulsory for drivers of all motor vehicles, except motor bicycles, to pass an examination and to allow a speed of 10 to 12 miles an hour in cities and 25 miles in the country.

The Automobile Club of Cologne, Germany, is receiving many congratulations for its success in making special arrangements with the governments of Belgium, France, Italy and Austria, which permit the members to cross the frontiers of these countries without having to pay duty or making deposit. The club holds itself responsible for any breach of its members.

One of the events of the New York show week will be the second annual banquet of the Hyatt Roller Bearing Co. The dinner will be held in Breton Hall hotel, Broadway and Twenty-fifth street. Invitations have been issued to about two hundred of the firm's friends in the automobile trade. In order that the out of town guests may have little trouble in locating the place, arrangements have been made for electric cabs and busses of which a sufficient number will be on hand at the main entrance of the Garden to convey everyone. After the banquet, Colonel Albert A. Pope has consented to deliver an address. A vaudeville entertainment with the best talent will follow. The affair will be robbed as much as possible of all formality, the object that everyone present shall have as enjoyable an evening as possible.

Great interest has been created among San Francisco, Cal., automobilists since the recent race meet there, and in consequence the Automobile Club of California at present has 200 members. Less than a month ago the membership did not exceed 125. At the last meeting of the board of governors the question of an automobile show was brought up and several of the members have taken the matter in hand, and it is probable that a show will be held in the spring. It is expected that many of the exhibitors at the eastern shows will arrange to go west after the exhibitions in the east have closed. E. P. Brinegar, president of the Pioneer Automobile Co., and Cuyler Lee, of the Western Automobile Co., are preparing to go east soon, and they will get the sentiment of the manufacturers regarding a show on the Pacific coast.

AMERICAN MOTOR LEAGUE OFFICIAL BULLETIN

ISAAC B. POTTER, Pres., Potter Bldg., New York
CHAS. E. DURYEA, 1st Vice-Pres., Reading, Pa.
W. GRANT MURRAY, 2d Vice-Pres., Adrian, Mich.

: OFFICERS :

S. W. MERRIHEW, 3d Vice-Pres., 154 Nassau St., New York
ROBERT L. STILLSON, Sec'y, 150 Nassau St., New York
FREDERICK B. HILL, Treas., 32 Binford St., Boston

CHAIRMAN OF NATIONAL COMMITTEES:

LEGISLATION.....George R. Bidwell, New York, N. Y.
ROAD IMPROVEMENT.....R. E. Olds, Lansing, Mich.
LOCAL ORGANIZATION.....Charles F. Potter, Denver, Colo.
TOURING.....W. H. Baker, Buffalo, N. Y.
TECHNICS.....Charles E. Duryea, Reading, Pa.

MEMBERSHIP.....Frank A. Egan, New York, N. Y.
SIGN BOARDS.....John B. Price, Hazleton, Pa.
RACING.....A. G. Batchelder, New York, N. Y.
PRESS.....Joseph Estoclet, Philadelphia, Pa.
HOTELS.....Francis N. Bain, Newburg, N. Y.

NATIONAL HEADQUARTERS, 150 NASSAU STREET, NEW YORK

REDUCED FARES TO NEW YORK

have been granted by the railway passenger associations to Members of the American Motor League who will attend the national convention of the league at Madison Square Garden, January 15 to 25, 1904, week of the Automobile Show.

By this arrangement all members coming to the convention will be able to make the round trip at one and one-third the ordinary one-way fare.

This concession applies to all territory from Denver, Cheyenne, Pueblo and Trinidad eastward to the Atlantic, and covers all the states within the lines of the New England, Trunk line, South Eastern, Central, Western and South-western Passenger Associations.

THE CONVENTION

has been specially called for the purpose of bringing together as many automobilists as possible and of engaging their attention and interest in the purposes and benefits of the American Motor League.

The first day of the meeting, January 19, will be a Good Roads Day, and speakers of national repute will address the league on that day.

On the following days papers and addresses on subjects of interest to all motor car users will be heard and steps taken to

ORGANIZE STATE DIVISIONS

and select officers for such states as are substantially represented at the meeting.

A general invitation is extended to all automobilists who favor the purposes and work of the league to be present and take part in the proceedings.

Printed information concerning the matter of reduced railroad fares will be sent on receipt of postal card request.

No reduced rate will be given to any person not holding the proper certificate, and only members of the American Motor League will receive the benefit of this reduced rate.

All who are not members, but who wish to join the league and attend the Annual Convention at New York—Automobile Show week—should send name and address with one year's dues, \$2.00, and receive membership ticket. All such persons will be given the benefit of reduced railway fares under the arrangement above described. Address

AMERICAN MOTOR LEAGUE,

150 Nassau Street, New York, N. Y.

THE AMERICAN MOTOR LEAGUE

is an organization to promote the interests of all users of motor vehicles; to ascertain, protect and defend their rights; to oppose and prevent the enactment of unreasonable and oppressive laws; to encourage the use of motor vehicles by agitation and instruction; to provide its members with printed routes, maps and guide books by which touring may be facilitated and encouraged; to promote the work of improving the public roads and the erection of proper guide boards, and other signs necessary to guide and warn the users of motor vehicles; to select and appoint official hotels, repair shops and supply stations where its members may obtain reliable service at reasonable rates.

WHO MAY BECOME A MEMBER

"Any man or woman, 18 years of age or over, of good moral character and respectable standing, friendly to the motor vehicle and its interests, shall be eligible to membership."

(Constitution, Article 2, Section 1.)

The League is extending its membership in all parts of the country. We invite all friends of the movement to join and aid in building up a powerful organization.

NO INITIATION FEE. ANNUAL DUES \$2 IN ADVANCE, OR \$3, INCLUDING 1 YEAR'S SUBSCRIPTION TO MOTOR AGE.

Automobiles

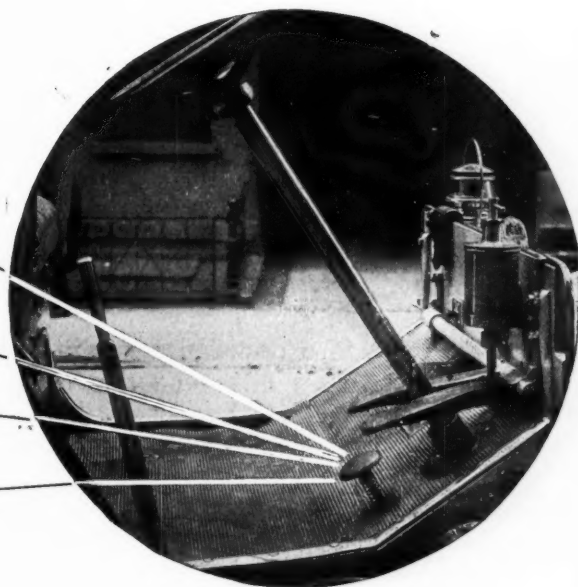
F.I.A.T.

Auto Boats

"THE BEST THAT MONEY CAN BUY"**YOU USE YOUR HANDS FOR STEERING ONLY**

:-: :-: AND :-: :-:

F^{IND}
I^T
A^{LL}
T^{HERE}



Find Us At Spaces 4 & 5, Exhibition Hall, Madison Square Garden

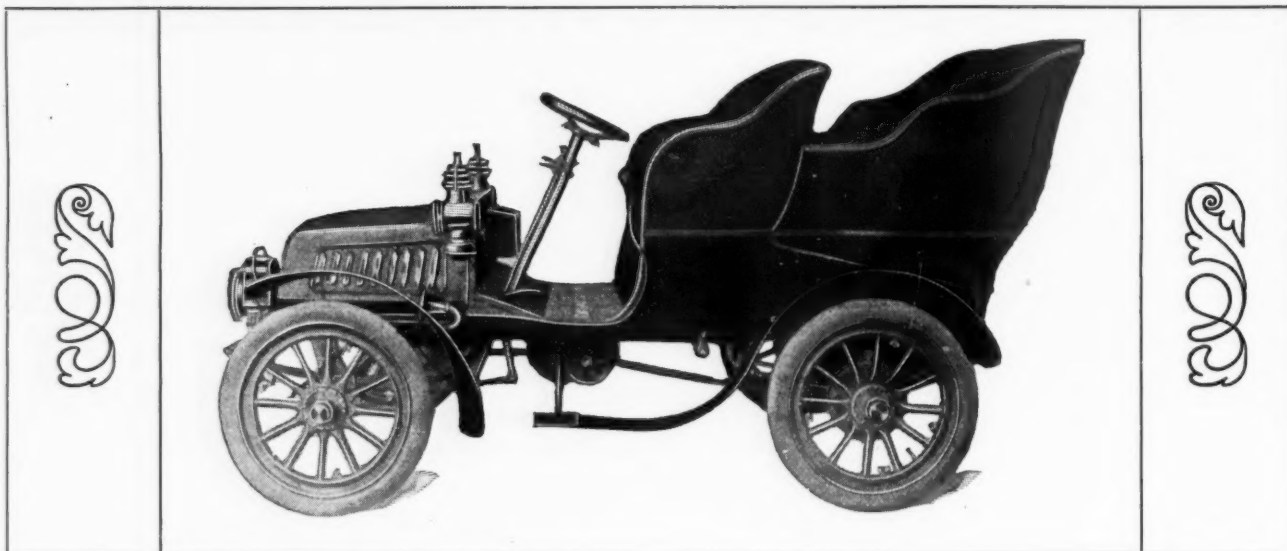
NO OTHER MOTOR SO SIMPLE
 SO SUPPLE
 SO SILENT
OR SO SERVICEABLE

HOLLANDER & TANGEMAN,

LICENSED UNDER SELDEN PATENT

5 WEST 45TH STREET, - - - NEW YORK CITY

SOLE AGENTS FOR UNITED STATES AND CANADA



If You Want a Car

So simple a child can run it
 So strong it will stand any kind of usage
 So powerful it will climb any hill
 So comfortable you can ride in it all day without being tired
 So well built it will stay out of the repair shop

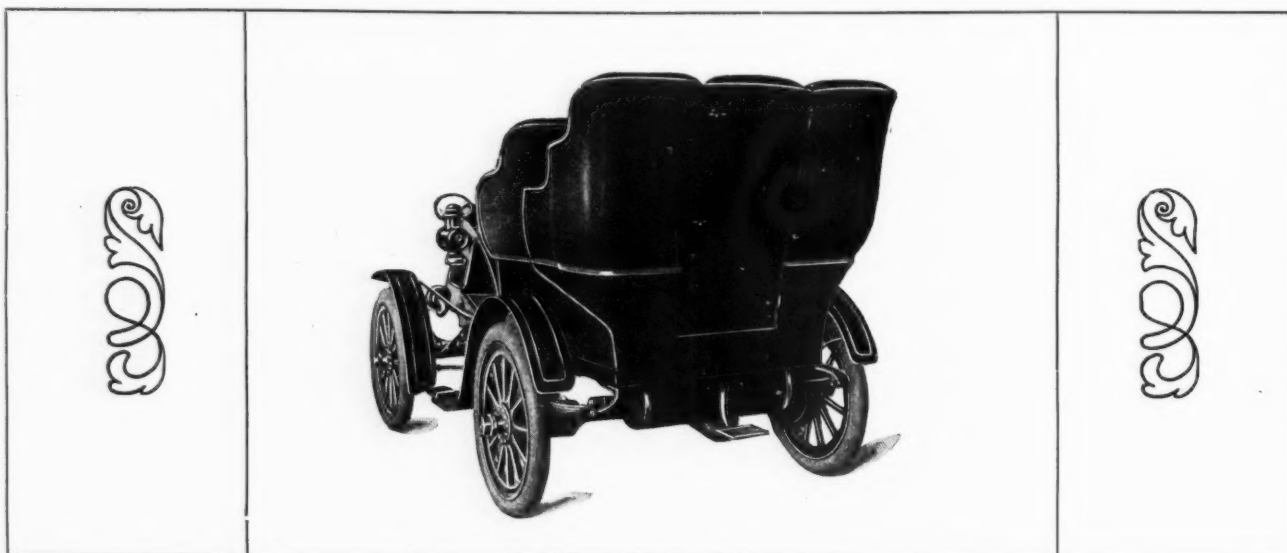
Get The Dawson

15 B. H. P., two-cylinder upright motor, spur gear and positive clutch transmission, chain drive—no side levers, long wheel base—seats as roomy and comfortable as a Davenport, high grade honest work and material, superb finish. Will be exhibited at the New York and Chicago Shows.

CATALOGUE FOR ASKING

J. H. DAWSON MACHINERY COMPANY

Canal and Washington Sts., CHICAGO, ILL.



We Would Like to See a

dealer who knows an AUTO-MOBILE from a horseless wagon, who does not want the Cadillac agency. The man who can go through our factory, inspect our methods and machines, see the stock coming out *now*, at the rate of twenty complete automobiles per day, and not desire the agency is yet to be seen. No dealer who has yet called on us has failed to try to get the Cadillac agency.

If you want a machine that will *sell*; one that you can get when you *want it*, and one that will stay sold and help sell more, you can make no mistake in securing the Cadillac agency. Last year when we introduced the

CADILLAC

to the dealers at the Show, they were advised by our competitors, that we were giving "too much for the money," and expressed the belief that our career would be a short one. We closed the year a leader in the business. No other machines sold more readily, no other machine was more popular, no other machine equaled it at anywhere near the same price.

Cadillacs were money makers for every dealer who handled them. They are trade builders, and the dealer who hasn't got them wishes he had. For the coming season we are "handing out" a line that will keep competitors guessing for a while. If you *haven't* this agency it might pay you to try for it. Our advice is to get it if you can.

Cadillac Automobile Co.

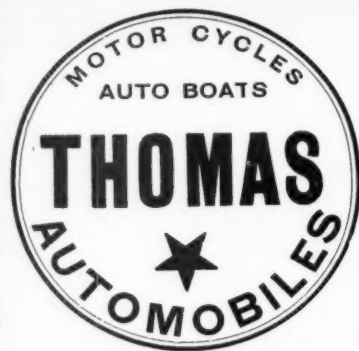
DETROIT,

Members of the Association of Licensed
Automobile Manufacturers.

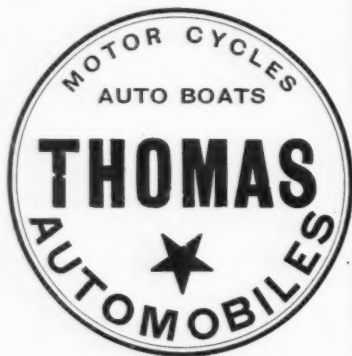
MICHIGAN

THE NEW THOMAS "FLYER" MODEL 22

probably meets a greater percentage of the requirements and desires of the well posted purchaser than any other American car. Anyone with half an eye on the automobile industry must have noted that the tendency is toward high power, light weight, multiple cylinder, vertical motors in front; strong, sliding gear transmission, driving direct on the high speed; noiseless, dust proof roller bearings; luxurious body building, and freedom from vibration. All these points are represented by the Thomas. The car is the result of a careful study of the development of the American and European trade. It possesses the qualities which have shown themselves to be superior. It anticipates many of the demands of the automobilists of the future. For instance, its three-cylinder motor is a feature that the best European practice shows to be sure of wide adoption.



GIVING A THOMAS CHASSIS A ROAD TEST



The following is quoted from the Paris show review in MOTOR AGE of December 31:

"If there is any one particular element which, by more general use than before, may be taken to represent the direction motor car design has taken, it is the three-cylinder motor, seen on enough of the cars of well known excellence to warrant the belief that it will continue to spread in favor."

When you get the Thomas you get the limit; best in its class; few at 50 to 100 per cent greater cost equal to it; no car better. One horse power to every 83 pounds weight; high speed; simple, positive control; strongest in hill climbing; economical in tires, operation and repairs. Every improvement is a credit to our reputation, because it is of benefit to the user.

E. R. THOMAS MOTOR CO.

Member of the Association of Licensed Automobile Manufacturers

1202 Niagara Street

BUFFALO, N. Y.

SEE THE

Four-Cylinder

PEERLESS



At the Shows

AGENTS EVERYWHERE

Home Address: THE PEERLESS MOTOR CAR CO., Cleveland, Ohio, U. S. A.
Member Association Licensed Automobile Manufacturers.

A TALE OF TRIUMPH

THIS is the title of a fascinating little story of the "Pierce" cars in the famous Endurance Test of 1903, which has been prepared for free distribution by the George N. Pierce Co. It will be mailed to all who ask, together with the latest matter on the subject of the "Pierce Stanhope" and "Arrow Motor Car." All of these publications can be obtained of the dealers mentioned below and at the New York Show, Spaces 59 and 60. The "Pierce" cars have written for themselves "A Tale of Triumph." They have always "made good." All "Pierce" entries in the recent Endurance Test made every control on schedule time and were awarded Gold Medals. These models will be exhibited in New York and Chicago, together with our latest and greatest production, the "Great Arrow," a four-cylinder car of 24-28 h. p., embodying all the best and most modern engineering experience. The "Great Arrow" is the equal of any car produced in the world.

THE GEORGE N. PIERCE CO.

Member of Association of
Licensed Automobile Manufacturers



MAKERS,

BUFFALO, N. Y.

SPACES 59 and 60, NEW YORK
19, 20, 35 and 36, CHICAGO

SOLD BY

BANKER BROS. CO., New York, Philadelphia, Pittsburg

Dowling & Maguire, Boston

Western Automobile Co., St. Louis

Miller-Mundy Motor Car Co., Utica, N. Y.

George N. Pierce Co., Denver, Colo.

R. V. Connerat, Savannah

Wilson & Co., Ottawa, Ont.

F. A. Mabbett, Rochester, N. Y.

Conrad Bros., Scranton, Pa.

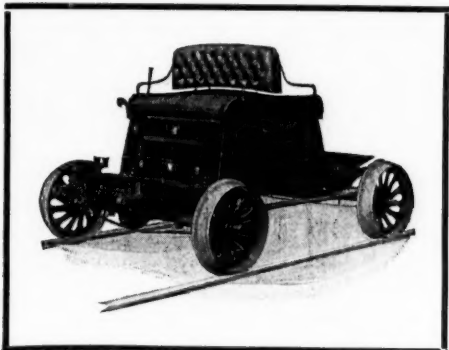
Chicago Auto Repository Co., Chicago

Mobile Carriage Co., San Francisco

R. W. Whipple, Binghamton, N. Y.

Gregory & Co., Fresno, Cal.

N. L. Biever, Derby, Conn.



When visiting the Madison Square Automobile Show be sure and see the Oldsmobile line in spaces Nos. 75, 76 and 77. The Oldsmobile line will be seen at the Chicago Automobile Show in the Coliseum in spaces Nos. 57, 58, 73 and 74.

The Oldsmobile Railway Inspection Car

A practical example of the way the makers of the Oldsmobile keep abreast of the demands of the times is seen in this new RAILWAY INSPECTION CAR.

This new Oldsmobile adapted to track service, will very quickly supplant hand-cars and railway velocipedes of every sort. For comfort and convenience there has never been anything to equal it.

Price \$450

As to its mechanical reliability, it is necessary only to say that it is equipped with the same 4 I-2 horsepower engine that has made the Oldsmobile Runabout famous on five continents.

Wheel base is standard gauge, seats four, and can be lifted from track by two men. Handsomely finished in dark green and black, with nickeled trimmings.

*For further information, see our nearest selling agent,
or write direct to*

OLDS MOTOR WORKS

1300 Jefferson Ave., DETROIT, U. S. A.

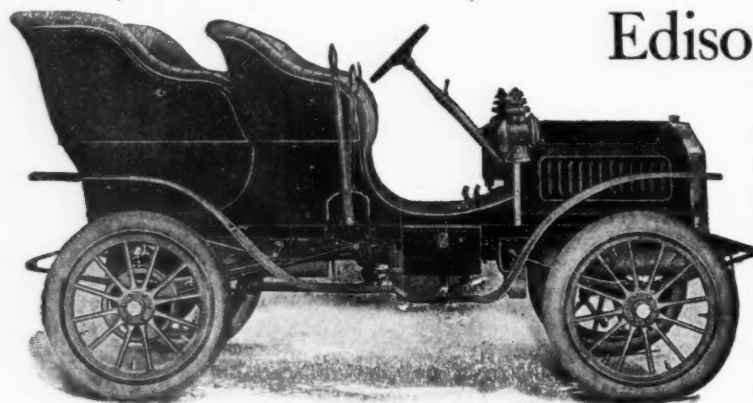
Member of the Association of Licensed Automobile Manufacturers.



Most Dealers Know Our Line of

National Electric Vehicles

We have been making Electrics for four years, and offer the agent a most attractive line, consisting of Electrobiles, Runabouts, Road Wagons, Traps, Stanhopes, and a divided battery model designed to meet the special requirements of the new



Reproduction here shown is the first time in print.
Looks good—doesn't it? Then remember

Edison Battery

Few dealers, however, are aware that ever since the formation of the National Company, extensive experiments have been slowly, but surely, developing the gasoline type, and we presume that our up-to-date touring cars will surprise our friends—We propose to show it for the first time in our spaces No. 117 and 118 at the
NEW YORK AUTOMOBILE SHOW.



"THEY GO THE ROUTE"

It's the dependable kind—the sort that grows into your affections as you become better acquainted. In construction we have followed the most approved practice. Motor: 4 cylinder, vertical, individually mounted, 20 and 40 h. p. Transmission: Slide gear—three forward and reverse. Bevel gear drive. "No chains."

If you come to New York you can look them over
If you fail to go, write us for advance circular

NATIONAL MOTOR VEHICLE CO., Indianapolis, Indiana
1200 East Twenty-second Street.

"The Eldredge"
IS READY

A Revelation in Values

TWO CYLINDER MOTOR

(Eight horse power and perfectly balanced.)

MECHANICAL LUBRICATION

(The kind usually found on the \$5,000 cars.)

SLIDE GEAR TRANSMISSION

(Three speeds ahead ; two reverse.)

MULTIPLE DISC CLUTCH

(Starts without jerk, holds everything in sight.)

ALL FOR \$750.00

MATCH IT IF YOU CAN

A LIMITED NUMBER OF 1904 AGENCIES OPEN. Correspond with us or arrange to see the car at our own branches in New York or Chicago] during the shows. : : : : OUR CATALOG IS WORTH READING.

NATIONAL SEWING MACHINE COMPANY

"The Eldredge"

NEW YORK

BELVIDERE, ILLINOIS

CHICAGO

"The Eldredge"

SAN FRANCISCO

NEW YORK HEADQUARTERS, SHOW WEEK:
EIGHTH AVENUE & 56th STREET, With Woods Motor Vehicle Co.

Don't imagine that all tires are alike. Some never are good. Many *look well* at first but soon give out because not properly made. Others look well at first and continue to look and wear well because they are honestly made.

Every detail of construction in

G & J TIRES

is given the care and attention that positively insures results of the highest quality. That is why we invariably please our patrons and maintain our standards.

You can avoid mistakes by buying a make with a reputation—the product of a concern with a standard to maintain.

Don't take chances with the safety of your vehicle or yourself when you can secure protection by using the G. & J. Tires.

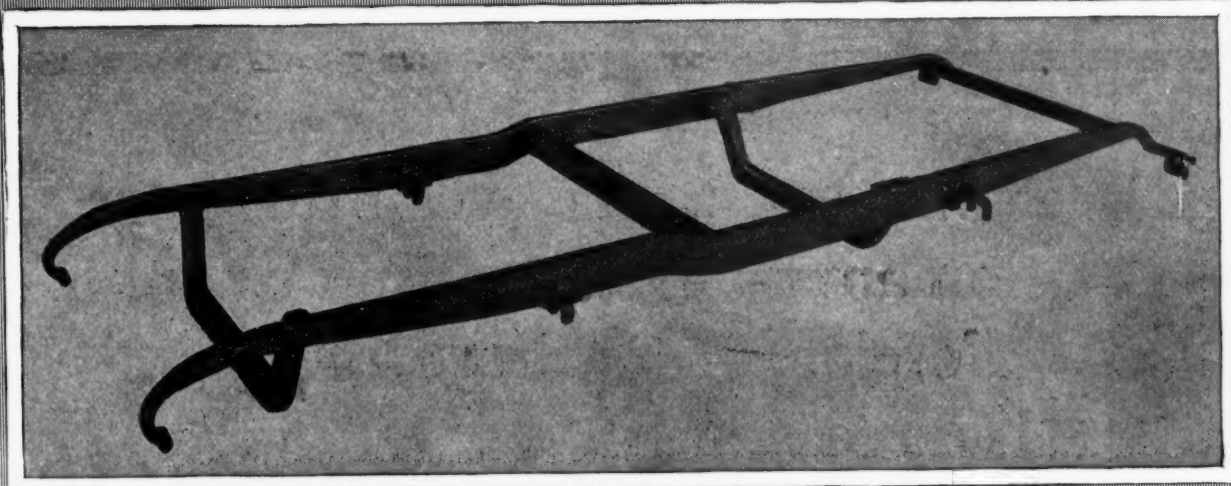
NEW YORK SHOW: Space 147

CHICAGO SHOW: Spaces 153 and 154

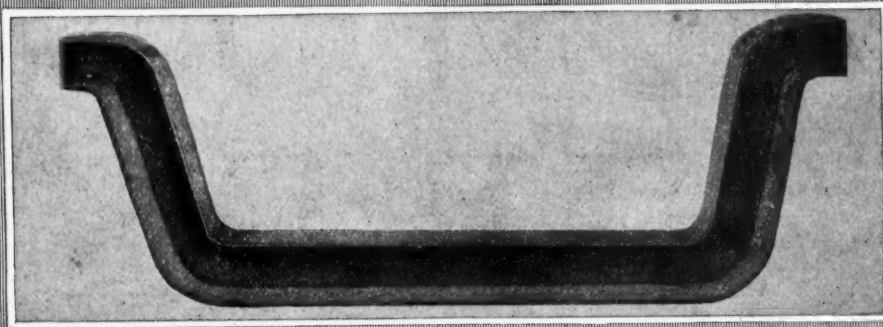
G & J TIRE CO.
INDIANAPOLIS, IND.

Chicago Selling Agency: 136 East Lake St.

PRESSED STEEL FRAMES



These Top Frames are made of Cold Rolled Steel and are supplied, with or without Forgings, assembled or as Frame Members



Typical Pressed Steel Frame Member

We make a specialty of manufacturing to customers' specifications. Let us figure with you (in quantity) for:

FRONT AXLES—TUBULAR AND FORGED
 REAR AXLES—CHAIN AND BEVEL GEAR DRIVE
 (Ball, Roller, or Plain Bearings)
 CHANGE GEARS TRANSMISSION GEARS
 PRESSED STEEL AND MALLEABLE HUBS
 ENGINE CRANKS MUFFLERS

New York Show
 Spaces 152, 153, 154, 155

Chicago Show
 Spaces 132, 133, 134, 135

Send for Catalog of Standard Parts

FEDERAL MANUFACTURING COMPANY
 Cleveland, Ohio

SELLING AGENT—HAYDEN EAMES—Cleveland.

The Newest World's Records

The fastest time ever made
on any course, American or
Foreign, on a voiture legere
was made with

DIAMOND TIRES

At Daytona, Florida, January 4, 1904,

THE GRAY WOLF

equipped with Diamond Tires, cut the world's
one-mile record to 46 2-5 seconds, the five-
mile record to 3:53 4-5 and the kilometer to
29 2-5 seconds.

Proving positively that Diamond Tires are
not only the most durable but the fastest
tires on earth.

THE DIAMOND RUBBER CO.

NEW YORK, 15 Warren St.
NEW YORK, 1717 Broadway.
BOSTON, 174 Columbus Ave.
PHILADELPHIA, 304-306 N.
Broad St.
BUFFALO, 41 Court St.

AKRON, OHIO

DETROIT, 310 Woodward Ave.
CLEVELAND, 323 Huron St.
CINCINNATI, 1559 Gest St.
CHICAGO, 167-169 Lake St.
DENVER, 1655 Blake St.
SAN FRANCISCO, 8 Beale St.

The Only Safe Way to Buy

Foreign Automobiles

is to buy them direct from the authorized American Agents, who hold licenses for importation under the basic Selden patent. The cars they represent are Panhard, Decauville, Mors, Rochet-Schneider, Mercedes, Criterium, Peugeot, Renault, Georges Richard Brasier and Fiat. These cars represent practically all of the reliable cars made in Europe.

BECAUSE:

First: If you buy from any others you render yourself liable to a suit for damages as an infringer of the Selden and other basic patents.

Second: You thus buy from importers of ample capital and recognized standing, whom you can hold directly responsible for defective parts and the carrying out of all guarantees.

Third: You thus have at hand, without being put to cable expense or a month or more of delay for mail and importation, those from whom you may obtain parts for replacement and to whose thoroughly equipped shops, with European factory experts in charge, you may look for prompt and proper repairs.

Fourth: You have a selection from the standard European makes and run no risk of being victimized by unprincipled makers and speculators endeavoring to dump machines rejected abroad on what they boast to be an easy American market.

Fifth: You thus have no custom house entanglements and the bother of license procurements and payments as you must have if you import direct.

The following hold licenses for the importation of the above named Automobiles:

STANDARD AUTOMOBILE CO.,

136 West 38th Street

CENTRAL AUTOMOBILE CO.,

Broadway and 52d Street

ALEXANDER FISCHER, 239 W. 50th Street

SMITH & MABLEY, 38th Street and 7th Avenue

E. B. GALLAHER, 140 W. 38th Street

AUTO IMPORT CO., 1 W. 34th Street

HOLLANDER & TANGEMAN, 5 W. 45th St.

NEW YORK CITY.

TWO NEW AUTOMOBILE TIRES

*The
Instantaneously
Detachable*
DUNLOP



The
**HARTFORD
CLINCHER**

Introducing an entirely new departure in rim construction. ∴ Its detachable side flanges or beads are removed by the simple loosening of a screw, leaving a flat faced rim, from which the tire can be removed "like slipping a belt off a pulley"—a loose belt at that,

AND

made under the G & J patents. This tire combines all the excellent qualities of that construction with many improved features of its own, hitherto characteristic only of **the foreign** makes

===== WILL BE EXHIBITED AT =====
NEW YORK SHOW, Spaces 1 and 2
CHICAGO SHOW, Spaces 151 and 152

THE HARTFORD RUBBER WORKS CO.

HARTFORD,

CONNECTICUT

BOSTON NEW YORK PHILADELPHIA BUFFALO CLEVELAND DETROIT CHICAGO MINNEAPOLIS DENVER SAN FRANCISCO

NOTICE

USERS, AGENTS, IMPORTERS, DEALERS AND
MANUFACTURERS OF

Gasoline Automobiles

United States Letters Patent No. 549,160, granted to George B. Selden, November 5, 1895, controls broadly all gasoline automobiles which are accepted as commercially practical. Licenses under this patent have been secured from the owners by the following named:—

MANUFACTURERS

Electric Vehicle Co.	Pope Motor Car Co.
The Winton Motor Carriage Co.	The J. Stevens Arms & Tool Co.
Packard Motor Car Co.	H. H. Franklin Mfg. Co.
Olds Motor Works	Smith & Mabley, Inc.
Knox Automobile Co.	The Commercial Motor Co.
The Haynes-Apperson Co.	Berg Automobile Co.
The Autocar Co.	Cadillac Automobile Co.
The George N. Pierce Co.	Northern Mfg. Co.
Apperson Bros. Automobile Co.	Pope-Robinson Co.
Searchmont Automobile Co.	The Kirk Mfg. Co.
Locomobile Co. of America	Elmore Mfg. Co.
The Peerless Motor Car Co.	E. R. Thomas Motor Co.
U. S. Long Distance Automobile Co.	Buffalo Gasoline Motor Co.
Waltham Manufacturing Co.	The F. B. Stearns Co.

IMPORTERS

Smith & Mabley, Inc.	Standard Automobile Co.
Central Automobile Co.	E. B. Gallaher
Alexander Fischer.	Auto Import Co.

Hollander & Tangeman

These manufacturers are pioneers in this industry and have commercialized the gasoline vehicle by many years of development and at great cost. They are the owners of upwards of four hundred United States Patents, covering many of the most important improvements and details of manufacture. Both the basic Selden patent and all other patents owned as aforesaid will be enforced against all infringers.

No other manufacturers or importers than the above are authorized to make or sell gasoline automobiles, and any person making, selling or using such machines made or sold by any unlicensed manufacturer will be liable to prosecution for infringement.

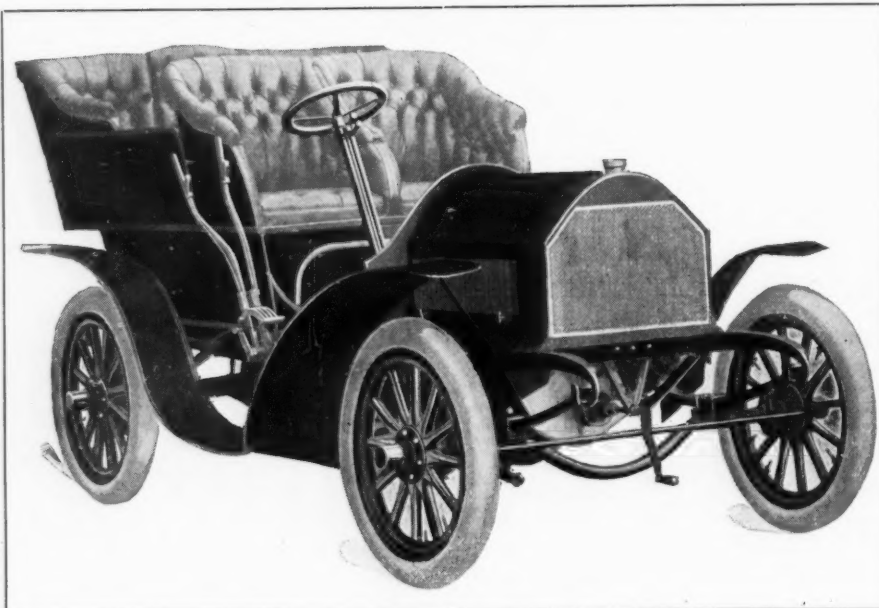
A suit was commenced on Oct. 22d against a dealer, and against a manufacturer infringing United States Letters Patent No. 549,160.

A suit was commenced Nov. 5th, against a purchaser and user of an automobile infringing the same patent.

A suit was commenced December 28th, 1903, against an importer of automobiles infringing the same patent.

Association of Licensed Automobile Mfrs.
No. 7 EAST 42d STREET, NEW YORK

THE ROYAL TOURIST



A Triumph In Motor Car Building

16 h. p. Bevel Drive...Three Speeds
... 90-inch Wheel Base... 34-inch
Wheels... Aluminum Body... Pressed
Steel Frame... Cellular Ventilator...
\$2,300... 40 Miles... 1,800 Pounds...
February Deliveries ... Booklet Now

THE ROYAL MOTOR CAR CO.,

Formerly
THE HOFFMAN
AUTOMOBILE
& MFG. CO.

CLEVELAND, OHIO



The
Northern Runabout
6½ Horse-Power
Price \$750

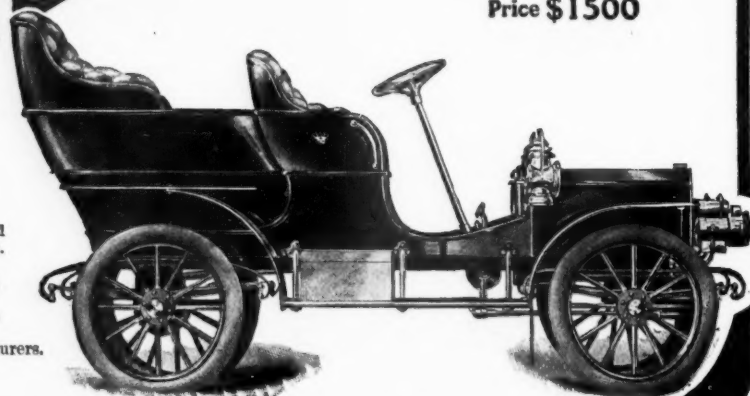
*"To ride in a NORTHERN RUNABOUT—
is to sit in the lap of luxury."*

Its stylish outlines, handsome finish and appointments, independent body swing, strength and going-power make it the ideal runabout for appearance—for comfort—for accomplishment.

The Northern Touring Car

is a big, vigorous, handsome symmetrical machine for those who want a car of power and size. (Not a runabout with a tonneau tacked-on). Double Opposed Cylinder Motor, Direct Drive.

15 Horse-Power
Price \$1500



Write for catalog and
name of nearest agent.

NORTHERN MANUFACTURING
COMPANY, Detroit, Michigan.

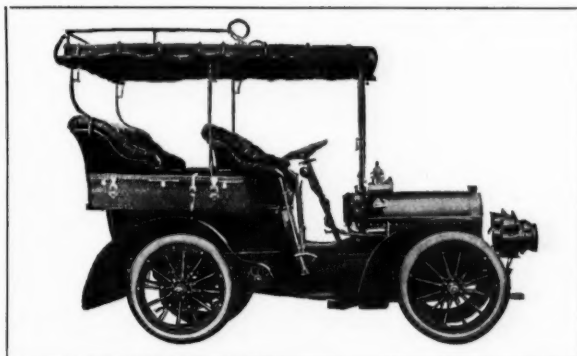
Member National Association of Automobile Manufacturers.

NORTHERN AUTOMOBILES

Locomobile

Gasoline Touring Cars

Equal in materials and workmanship to the best Foreign Cars but — **BETTER ADAPTED TO AMERICAN CONDITIONS** on account of ample clearance, interchangeable parts, etc.



Special attention paid to the selection and testing of materials. Every motor is given a special test under load. Every complete chassis is tested on the road for several hundred miles before finishing.

A New Four-Cylinder Touring Car with Cellular Radiator

Better place your order now for early spring delivery, many others are doing so.

The Locomobile Company of America, BRIDGEPORT, CONN.

MEMBERS OF THE NATIONAL ASSOCIATION OF LICENSED AUTOMOBILE MANUFACTURERS.

List of Branch Offices:

NEW YORK: Broadway, corner of 76th St.
PHILADELPHIA: 249 N. Broad St.

BRIDGEPORT: Factory at Seaside Park.
BOSTON: 15 Berkeley St.

CHICAGO: 1354 Michigan Ave.



The Ford Motor Car

THE coming of the Ford marked a radical change in Automobile building. The double opposed motor gives such universal satisfaction that manufacturers of single cylinder machines are changing their engines to compete with our type of car. . . . The success of the Ford is due to the originality of its construction. Its reliability is assured by the highest grade of materials. . . . The most severe tests have proved the Ford to be "The King of the Road." . . .

\$900 with Conneau. \$800 as a Runabout.

Lamps, Horn and Brass Trimmings, Extra.

Mr. Ford made the first Automobile in Detroit and third in the United States. The Ford Motor Car of today represents the most advanced type of Automobile construction.

We agree to assume all responsibility in any action the Trust may take regarding alleged infringement of the Selden Patent to prevent you from buying the Ford—"THE CAR OF SATISFACTION."

Write for full information and illustrated catalog to :: :: ::

FORD MOTOR CO., Detroit, Mich.

DARRACQ

NEW MODELS
NEW IDEAS
NEW STYLES

1904

GENUINE
FRENCH IMPORTED
MOTOR CARS

THE patented inventions of Darracq Chassis the feature of Paris Automobile Show. All the new models will be exhibited at New York Automobile Show January 16-23, space J. 12-15-20-24-30-35 and 15-20 H. P. Chassis, Darracq Cars were awarded fifty-eight prizes in 1903. File your name with us for new catalogue now in press. :: :: :: ::

American Darracq Automobile Company

CONTROLLED BY
F. A. LA ROCHE COMPANY

652-664 Hudson Street
and 147 W. 38th Street, N. Y.

BRANCHES: CHICAGO PHILADELPHIA BOSTON PITTSBURGH

"IMPERIAL" Gasoline Automobiles

DOUBLE OPPOSED
AIR-COOLED MOTOR

ARE ALWAYS READY
THE HOTTEST DAYS OF SUMMER
THE COLDEST DAYS OF WINTER

BEVEL GEAR DRIVE
SLIDING GEAR TRANSMISSION

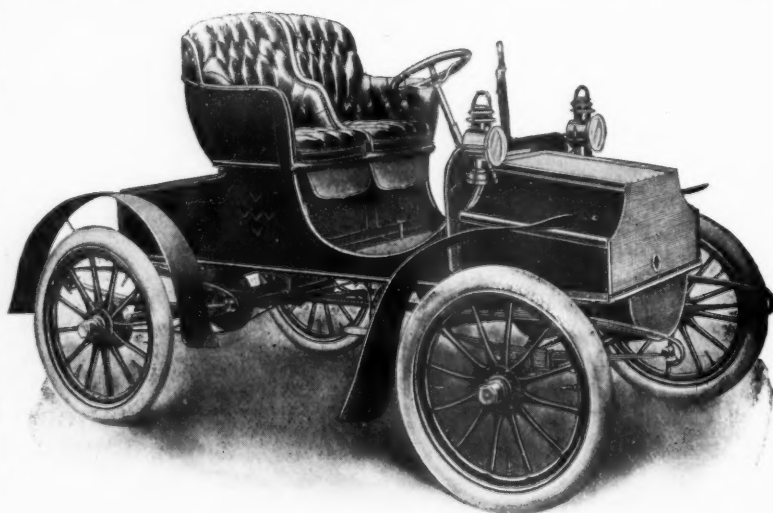
WE MANUFACTURE 4 DIFFERENT MODELS

- Model A. Open Runabout
- Model B. Runabout Furnished with Falling Top or Doctor's Top
- Model C. Delivery Wagon
- Model D. Full Glass Doctor's Car

All of which we will have on exhibition at the Fourth Annual Automobile Show in New York and the Third Annual Automobile Show in Chicago.

HAS ALL THE LATEST IMPROVEMENTS

Our "IMPERIAL" Automobiles are driven by double opposed air-cooled engines (no water, no radiator coils, no pump), placed in front, away from all dirt and dust. All parts accessible by simply lifting the hood. Has bevel gear drive instead of sprocket chain. Sliding gear transmission. Two brakes. Automatic spark timer. Forced feed oiler of large capacity. Tilting steering wheel. Our spring suspension we claim is the most practical and best ever shown on any automobile. Body of handsome design, roomy and comfortable, and with ample room back of seat for carrying a number of parcels. Upholstered in the finest quality of leather.



IMPERIAL MODEL "A"

AGENTS WANTED IN UNOCCUPIED TERRITORY
BOOKLET ON APPLICATION

RODGERS & CO., COLUMBUS, OHIO, U. S. A.

CLASSIFICATION DISTINCTIVE ... WHY?

THE LIGHTEST
THE STRONGEST
MOST DURABLE
MOST EFFICIENT
BEST FINISHED



ABSOLUTELY SAFE
PERFECTLY CLEAN
BEST TO RIDE
MOST ECONOMICAL
TO KEEP

THE BAKER ELECTRIC

Attractive in Rich Finish and Design. ✱ Simply Manipulated. ✱ Always Satisfactory.
A Carriage Any Lady Can Drive.

SEND FOR OUR B K CATALOG.

THE BAKER MOTOR VEHICLE CO., Cleveland, Ohio

\$2,000

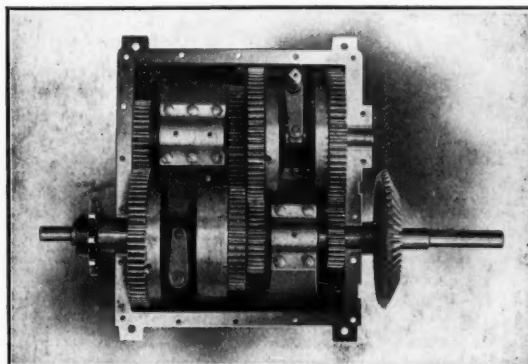
AIR-COOLED

\$2,000

SANTOS DUMONT

The Flying Automobile

Built To Go
Easy Riding
Four Cylinders
Weight
1800 Pounds



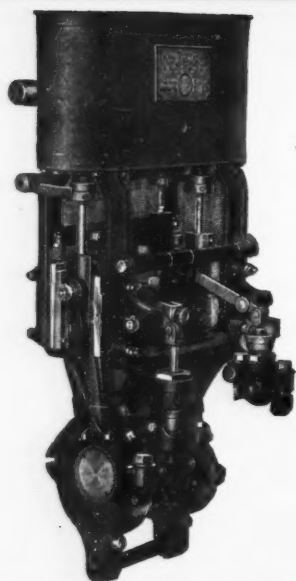
Made To Stand
Ample Power
20 Horsepower
Over 1 h. p. to
each 100 lbs.

Its elegance of appointment recommends it to people of quality.
Agents should make inquiries before the Automobile Shows.

\$2,000

Columbus Motor Vehicle Co.
COLUMBUS, OHIO.

\$2,000



THE "NEW MASON" Model C

We do not claim that

The "NEW MASON"

(Model "C")

includes all of the many excellencies of the original Mason Engine, with additional features, which give it a still greater lead ahead of all other steam auto engines.

Every part of the Mason Engine has been critically gone over, and wherever possible, improved, strengthened and perfected in every smallest detail.

We have made, operated and repaired more steam auto engines than any other concern, and have concentrated in the "Model C" all of the experience gained by this wide observation of all other engines.

The Mason "Model C" is a perfect engine, but do positively affirm, and are ready to back up our affirmation, that it is, from every standpoint,

THE BEST AUTO ENGINE IN THE WORLD.

Our "Model C" catalogue will tell you all about this engine, and prove interesting to every autoist. It will be a pleasure to mail you a copy. Send postal card for it to-day.

A full line of parts for all Mason Engines will be found at 147 Queen Victoria St., London, England.

THE MASON REGULATOR COMPANY, - - 158 Summer Street, BOSTON, MASS.

Kindly mention this publication in writing.

The Locomobile Steam Car

If you want a

SWIFT RUNABOUT

which you can operate with equal facility either in crowded streets or in the country...Get a Locomobile Steam Car.



The Locomobile is the best automobile

If you want

A RUNABOUT

that will climb every hill it comes to without any doubt about it....Get a Locomobile Steam Car.

LONG WHEEL BASE RUNABOUT

125 Miles on Gasoline . . . A Very Desirable Car

Write for information about our Steam Models

The Locomobile Company of America, Bridgeport, Conn.

MEMBER OF THE NATIONAL ASSOCIATION OF LICENSED AUTOMOBILE MANUFACTURERS

List of Branch Offices :

NEW YORK: Broadway, corner of 76th St.
PHILADELPHIA: 249 N. Broad St.

BRIDGEPORT: Factory at Seaside Park.
BOSTON: 15 Berkeley St.

CHICAGO: 1354 Michigan Ave.

If an auto you would buy
Be sure to buy the best
For there isn't one in under the sky
That's in it along side the Crest.

MORAL

Owing to the fact that we are now safely
quartered in our new 1000 Crest factory all
of our agents are assured of a

Happy New Year

RUNABOUTS :: DELIVERIES



MEDIUM AND LARGE TOURING CARS

For 1904 Catalog
Write Dept. K.

CREST MFG. CO., Cambridge, Mass.

For 1904

Columbia
Automobiles

comprise the leading vehicles which
made the COLUMBIA name famous
during 1903, and several entirely new
models, including our MARK LX
ELECTRIC RUNABOUT, the fastest
and handsomest auto in its class as well
as the lightest of equal battery power;
also our new 12 h. p. LIGHT GASO-
LINE TONNEAU, with double opposed cylinder engine in forward bonnet and automatic features of
control, which make it easier to operate than any other gasoline car.

A catalogue of the Columbias including our high powered Gasoline Touring Cars, will be sent on request.
Also special catalogues of our Electric Commercial Vehicles and Town Carriages of the coach class.



COLUMBIA ELECTRIC RUNABOUT, MARK LX

ELECTRIC VEHICLE CO., - Hartford, Conn.

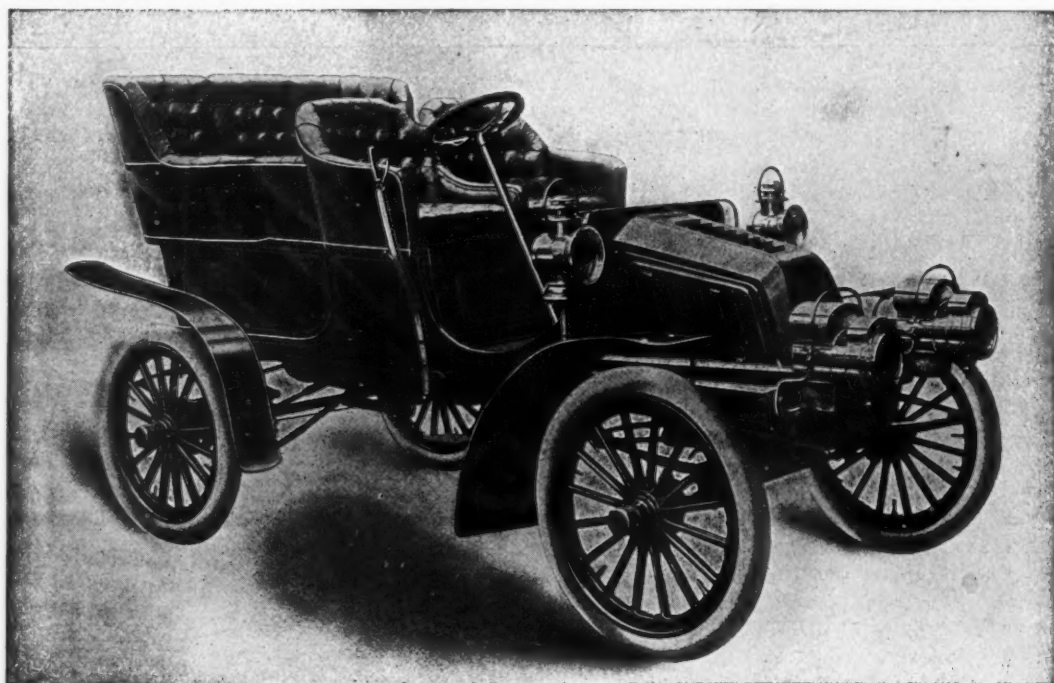
New York Branch: 134-136-138 West 39th St.

Chicago Branch: 1413 Michigan Ave.

Boston Branch: 74-76-78 Stanhope St.

Member Licensed Association of Automobile Manufacturers.

Both Fredonias Came Through



PRICE, \$1,250.00

the greatest flood in the history of New York State and finished

The Endurance Run

at Pittsburg on time and without loss of efficiency points.

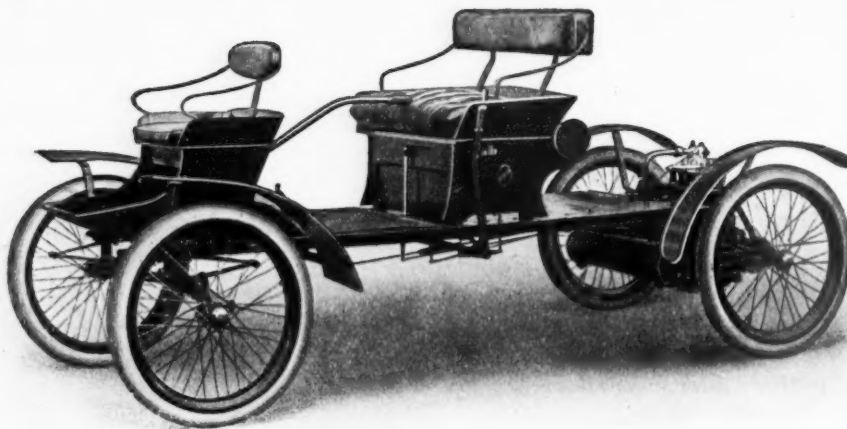
Both the Fredonia Tonneau No. 2 and the 9-horsepower Runabout are stayers in any kind of use.

Our run demonstrated this beyond peradventure of a doubt.

FREDONIA MANUFACTURING CO., Youngstown, Ohio, U.S.A.

Chicago Agent: Edmond F. Dodge, of P. G. Dodge & Co., 2116 Lumber Street.
EXHIBITED AT 1303 MICHIGAN AVENUE

JUST FOR A KID



THE ORIENT BUCKBOARD

PRICE \$425.00

DETACHABLE CHILD'S SEAT \$25.00 EXTRA

OUR Motor Buckboard with its detachable child's seat fills a demand for a simple and inexpensive pleasure vehicle such as has never before been offered, and from what has already been done, we are assured that the sale for this machine will be enormous. Wise dealers everywhere are securing the agency and those who get it may be counted fortunate. Write for handsome new catalogue.

We will exhibit at New York Show, spaces 41, 42, 43. LOOK FOR THE BIG ELECTRIC SIGN.

WALTHAM MFG. COMPANY, Waltham, Mass.

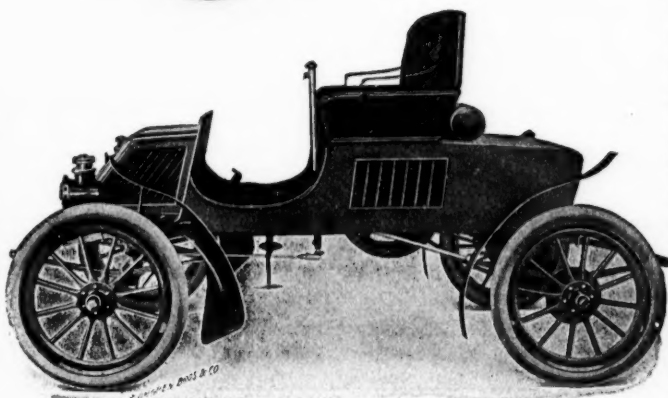
Members of the Association of Licensed Automobile Manufacturers.

WELL BALANCED

POWERFUL,
SMOOTH-RUNNING,
SIMPLE, DURABLE
and HANDSOME.

All good desirable qualities in an
Automobile, and all found in the

Rambler



Touring Car

Equipped with a 7 actual horse-power engine, costing less than a cent a mile to run; with wood artillery wheels and three-inch tires, two brakes and a well finished body, it is easily the best value on the market. Let us send you our illustrated booklet "A"; it verifies our statements. Some good unoccupied territory open now that we are up with our orders.

...WE HAVE ONLY ONE PRICE...

\$750

AT THE FACTORY.

Thomas B. Jeffery & Co.

KENOSHA, WISCONSIN

Branches: BOSTON—145 Columbus Avenue
CHICAGO—304 Wabash Ave., adjoining the Auditorium

WE ARE pleased to announce to our friends that we shall have an exhibit of our "STEVENS-DURYEA" GASOLINE AUTOMOBILE at the Fourth Annual Automobile Show to be held at Madison Square Garden, New York, January 16th to 23d, inclusive, and will occupy Spaces Nos. 34, 35 and 36, First Balcony. We extend to those interested in Automobiles an invitation to call and inspect our Car and to make our space their headquarters. :: :: :: Send for illustrated catalogue.

J. STEVENS ARMS AND TOOL CO.

:: :: 705 Main Street :: ::
CHICOPEE FALLS, MASSACHUSETTS

Decauville



Perfect as only the best French engineering skill can produce. Entire mechanism supported and absolutely protected against mud and water by steel pan.

10 HP., 16 HP. and 40 HP. 1904 models just arrived

Inspection, Comparison and Trial Invited
SEND FOR GREEN BOOK

STANDARD AUTOMOBILE CO. of N. Y.

Sole United States Agent

Salesroom: 136 W. 38th St. Garage: 146-148 W. 39th St.

NEW YORK

Phone, 476-38th St.

Licensed Importers under Selden Patent

LACKAWANNA

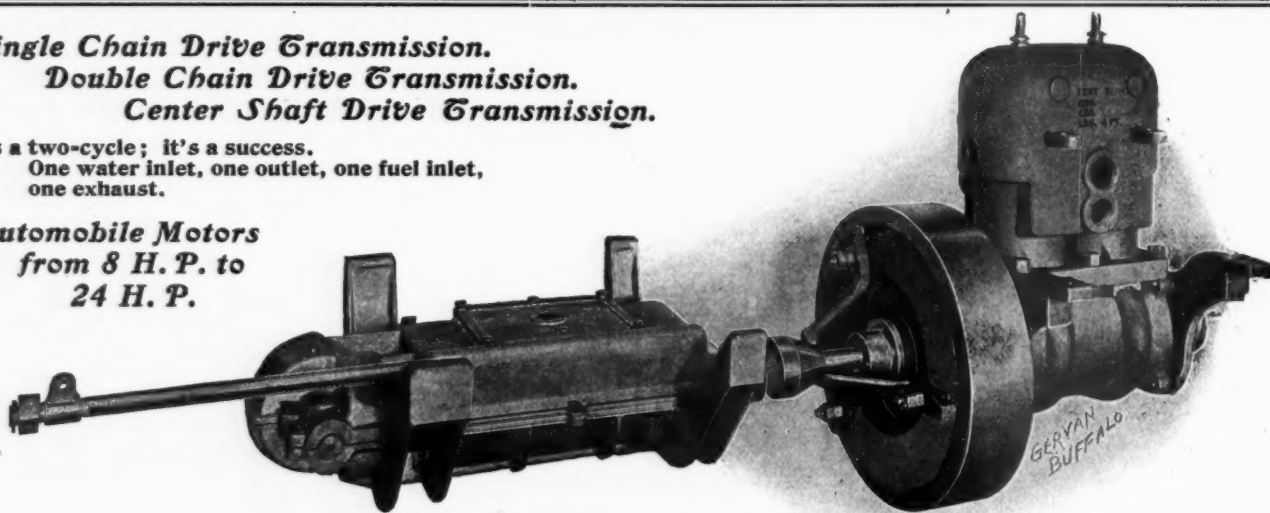
IS SYNONYMOUS WITH

QUALITY in MOTORS

*Single Chain Drive Transmission.
Double Chain Drive Transmission.
Center Shaft Drive Transmission.*

It's a two-cycle; it's a success.
One water inlet, one outlet, one fuel inlet,
one exhaust.

*Automobile Motors
from 8 H. P. to
24 H. P.*



Single Chain Drive Transmission and Clutch Coupled to Motor

For Prices and Points of Merit, Address
LACKAWANNA MOTOR CO., 50 Letchworth Street, Buffalo, N. Y.

Criterion Hotel

Broadway & 41st St., NEW YORK

**Handy to
Everywhere**

**Headquarters for the Western
Trade during New York Auto-
mobile Show.**

G. T. STOCKHAM, Prop.

THE LITTLE THINGS but
IMPORTANT.

Proper Linen, proper Glass—
proper table things.

Temperature, be it of Burgundy
or Champagne; chilled oyster or
sizzling steak; especially the room
you sit in—RIGHT.

And above all—SERVICE.

You don't have to ask for things.

LITTLE THINGS are BIG at
The CRITERION.

Table d'Hôte Dinner—Luncheon.
MUSIC. New Control.

Fourth Annual Automobile Show

Under the Auspices of the AUTOMOBILE CLUB OF AMERICA,
NATIONAL ASSOCIATION OF AUTOMOBILE MANUFACTURERS
and MADISON SQUARE GARDEN COMPANY at

MADISON SQUARE GARDEN
NEW YORK

SPECIAL NOTICE

The trade admitted free up to 1 o'clock
each day upon presentation of business card
and registering name and address at the
BUREAU of INFORMATION

January 16
to 23, 1904

FRANK W. SANGER, Manager

DON'T MISS

TO SEND IN SUBSCRIPTION FOR
1903-1904 NATIONAL AUTOMO-
BILE and BICYCLE DIRECTORY
JUST PUBLISHED.

CONTAINING names of the manufacturers of Auto-
mobiles, Motors, Engines, Bodies, Parts, Fittings,
and Dealers in Sundries, Repairing, Charging and
Storage Stations; also list of all Automobile Clubs and about
16,000 names of Automobile **Owners and Oper-
ators** throughout the United States; also a list of the
Dealers and Repairers of Bicycles in the United States and
Canada, by States and Territories, and a classified directory
of Manufacturers and Jobbers of Bicycles, Material, Parts,
Fittings, etc. :: :: **Price, \$5.00, Prepaid.**

PAUL MENSCH & CO., PUBLISHERS
92-94 LaSalle Street, CHICAGO, ILLINOIS



THE OLD WAY

The Hill Automatic Starter

Can be attached to any
Gasoline Car.

The operator mounts the car,
pulls a small valve lever, throws
in the clutch, and the car moves
off.

Write us what car you use, and
we will tell you all about it.

THE STEEL BALL COMPANY
840 Austin Ave.....Chicago, Ill.



THE NEW WAY

The STUDEBAKER AUTOMOBILE

ELECTRIC

With Exide or Edison Battery

RUNABOUTS SURREYS DELIVERY WAGONS
STANHOPES VICTORIAS AND TRUCKS

GASOLINE

TOURING CAR—Light and Powerful

“The Automobile with a Reputation
Behind It”

Write for Catalogue to

STUDEBAKER BROS. MFG. CO.

Automobile
Dept., SOUTH BEND, IND.

STUDEBAKER BROS. CO. OF NEW YORK, Broadway and 49th St., New York City
STUDEBAKER BROS. MFG. CO., 378 Wabash Ave., Chicago
STUDEBAKER BROS. MFG. CO., 15th and Blake Sts., Denver
Branch Houses and Agencies in other Principal Cities

HEADQUARTERS

FOR

Chicago Automobile Show

FEBRUARY 6th-13th....ONE BLOCK FROM THE COLISEUM.

..NEW SOUTHERN HOTEL..

13th Street and Michigan Boulevard.



200 ROOMS

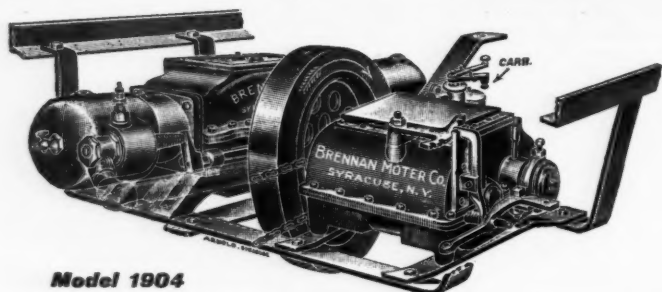
100 Rooms with Hot and Cold Water, \$1.00 and \$1.50 per day.

100 Rooms with Private Bath, \$1.50 to \$3.00 per day.

..First-Class Cafe at Popular Prices..

ALEX DRYBURGH, Pres. & Mgr.

..DON'T EXPERIMENT..



Model 1904

WE HAVE SPENT YEARS IN PERFECTING THE BRENNAN STANDARD GASOLINE MOTOR

And it does all that is claimed for it.

PERFECTLY BALANCED. SMOOTH RUNNING.

Our 6 H. P. will develop 6 H. P. on 700 revolutions per minute.
Our 8 H. P. will develop 8 H. P. at 700 revolutions per minute.

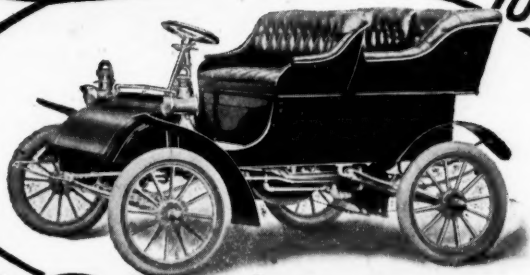
Guaranteed to develop 50 per cent. over rated power.

Sizes 8 to 30 H. P. 14 H. P. Special 1904 Model with Transmission.

Will exhibit at the New York Automobile Show space 3 Basement. Chicago
Automobile Show space 207 Gallery.

BRENNAN MOTOR CO., SYRACUSE, NEW YORK, U. S. A.

Let us tell more about the **Elmore** WITH TONNEAU



\$850.00

Do you know the difference between a four-cycle and a two-cycle gasoline engine? You should know before you buy an automobile, for the difference is the difference between waste-power and economized energy.

The two-cycle engine used exclusively in the Elmore is the evolution of years of exhaustive experiments. The eminent English engineer, Capt. C. C. Longridge, predicted its triumph before the British Institute of Mechanical Engineers, October 16th, 1902, when he said:

"Neither the four-cycle type nor the engine with one cylinder and two pistons will survive. The ultimate evolution will be the impulse-every-evolution, two-cycle engine."

The Elmore one cylinder two-cycle engine produces as much power as the two cylinder four-cycle engine of any other type and like capacity. It will climb hills at which the four-cycle would balk; and skim at high speed through sand and mud that would stall any machine in America of equal capacity. Strong talk? We mean it to be strong! We want you to inquire and investigate. If you do—we will sell you an Elmore. We know it.

Our 1904 catalogue and a little booklet "A long jump and two short steps" contains information about automobiles that will open your eyes. Write for it.

The Elmore Manufacturing Co.

Dept. G.

CLYDE, OHIO

Members Association of Licensed Automobile Manufacturers.

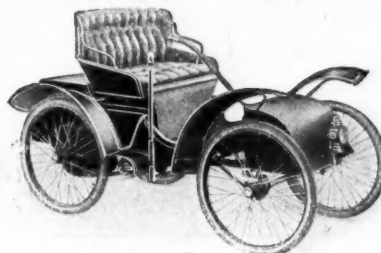
MODEL A 1904

Michigan Automobile

A Light Runabout for Two Persons

PRICE

Only \$450



PRICE

Only \$450

ON BOARD CARS AT FACTORY.

...NO CAR IS BETTER BUILT IN WORKMANSHIP OR MATERIALS...

EXTRACT FROM LETTER JUST RECEIVED:

Chattanooga, Tenn., Dec. 28, '03.
"In reply to yours of recent date will say that the "Michigan" you sold me is a good machine and a sure hill climber. I have not found the hill yet that has taken all the power to ascend. I have had it ten weeks today and it has not cost me one cent for repairs, never refused to start, go where I want it to and come home again. Saturday night I returned home from a ten days' hunt, from the Cumberland Mountains, two of us, a tent, cooking utensils, a 300-lb. deer, some squirrels and mountain pheasants on and in the little "Michigan." We covered 38 miles in 2 hours and 17 minutes."
Name of party given by request.

Send for catalog and further proof.

MICHIGAN AUTOMOBILE CO., LTD.
KALAMAZOO, MICHIGAN, U. S. A. MAKERS

"WHITE"

**SATISFACTION IS AN
ESTABLISHED FACT**

FROM all parts of the country come reports from satisfied owners telling of tours which they are making in White cars. The dominant note in all communications is complete satisfaction with the machine. Each owner of a White Touring Car seems eager to add his testimony to the reliability and simplicity of the mechanism and the consistent performance on all sorts of roads and in all kinds of weather. Therefore, it is with the greatest confidence that we offer this advice to all prospective buyers and to all those who are now driving gasoline machines (but have become dissatisfied with their behavior): "Ask the owners of White Touring Cars about them." We are quite certain that the longer they have ridden in them the more emphatic will be their commendation.

White Sewing Machine Company
CLEVELAND, OHIO

WRITE FOR WHITE BULLETIN No. 2

THE SILENT WOLVERINE

A Live Proposition for Live Agents

A FEW OF ITS CHARACTERISTICS ARE

Bevel gear drive with sliding gear transmission, three speeds ahead and reverse.
Speed range from 6 to 35 miles an hour.
3-inch angle steel frame—cannot weaken.
Long wheel base.
Large high back tonneau.
Finest leather upholstery.
Total seating capacity five or six.
Space under tonneau floor to carry extra tire, rain covers, etc.
Construction is above reproach in every item.

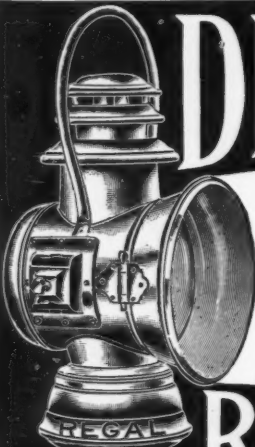


It is a 15-horsepower double opposed cylinder motor car with a line of improvements over ordinary construction that render it distinctively unique. The car runs as smoothly as a watch—it is oiled automatically—there is no bother with it. It is one of the surprises of the coming season. Full particulars and catalog for asking.

New York Show: Space No. 24, Exhibition Hall, Madison Square Garden.
Chicago Show: Spaces Nos. 128 and 129, Coliseum Bldg., Feb. 4 to 14.

The Reid Mfg. Co., Detroit, Mich.

New York Agents: MESSRS. DAY & CO., 220 W. 36th Street.



DIETZ AUTOMOBILE LAMPS

YOU WILL SEE DIETZ LAMPS

OR AN IMITATION OF THEM ON EVERY STEAM OR GASOLINE AUTOMOBILE.

WHY? Because both makers and users of lamps saw that we had the only practical way of making **GOOD OIL LAMPS**. You will be sure of satisfaction if you insist on **Genuine Dietz Lamps**.

R.E. DIETZ CO. 37 LAIGHT ST. NEW YORK. EST. 1840

Stamped with the Name.



No. 44—Quaker.

Richmond

Automobile Lamps for 1904

are absolutely the highest type of automobile lamps ever produced. They embody superior lighting and burning qualities not possessed by any other make and are built by hand, riveted throughout, with graceful lines and clean surfaces.

RICHMOND IND. MFG. CO.

RICHMOND, IND.

Catalogue of new models sent on application.

If you persist in old time methods in your factory, naturally you cannot expect your product to be as good, your output to be as large, or to achieve the same measure of success as your up-to-date competitor.

Electric Welding

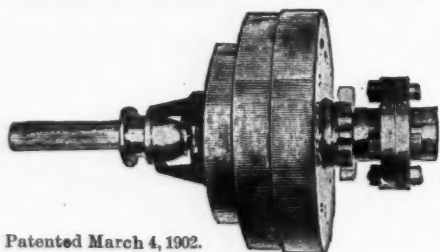
is, by reason of its superiority over the old time hand process, being rapidly adopted by the country's more prominent manufacturers, as the most satisfactory and most economical method. Our welding department is the welding department of many of the country's largest manufacturers.

We'd like a chance to prove what we can do for you in this respect. Send us your next job of welding as a test—you can do your own finishing. We pay charges one way on all work.

See us at the New York Show,
Space No. 148.



CHAMPION TRANSMISSION GEAR



Patented March 4, 1902.

TRIED. PROVEN.

Carefully designed. Accurately made. For sizes and prices and other information write

CHAMPION MANUFACTURING CO.

9-11 Alling Street,

NEWARK, N. J.

Throw your induction coil to the dogs!

The doggoned thing is no good anyway, and you will need it no longer.

THE BULLOCK IGNITOR

is not an induction-coil or spark-plug, nor any combination of the two, but is an entirely new electrical device similar in form to an ordinary spark-plug; and with current from batteries or dynamo produces what is in effect a jump-spark or continuous flame, which is unaffected by oil or soot.



ANY THREAD

There are no nuts or screws to work loose while on the road, and no adjustments of any description to puzzle or confuse. The workmanship is of the best, and the construction, while practical, is both simple and substantial. The spark can be timed, the same as the common jump-spark.

Our proposition will not interest you unless you have been "thro the mill" (broken-down coils, fouled plugs, etc.), and are looking for something better.

THE BULLOCK-BERESFORD MFG. CO.
CLEVELAND, OHIO.

Mention this publication when sending for printed matter.

**THE
Bullock
IGNITOR**



The Akron Clincher Tire

can be put on your car with the perfect assurance that it will stand the most vigorous wear that you can give it.

The Flat Tread Corrugated Akron Clincher Tire is proof against side-slipping. Made with elliptical tread if preferred.

Fits the Standard Clincher Rim.

Although it's scarcely ever needed, we give with each set of our Clincher Tires, a Repair Kit worth \$2.50 and a strong Pump.

Write for book describing all our tires, and free booklet, "How to Repair Tires"

THE GOOD YEAR TIRE & RUBBER CO.
Dept. A., AKRON, OHIO.

New York, 127 Duane Street
Chicago, 110 Lake Street
St. Louis, 1219 North Broadway

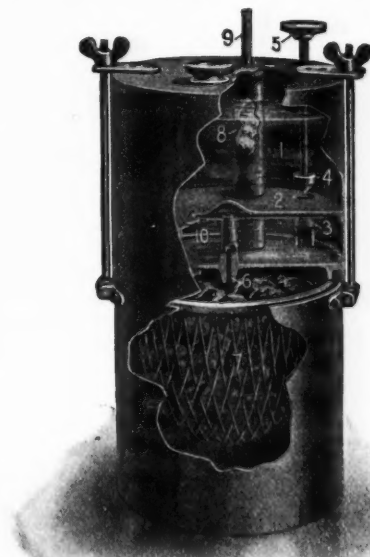
Boston, 6 Merrimac Street
Cincinnati, 722 Main Street
Detroit, 242 Jefferson Avenue

SEARCHLIGHTS ARE USELESS

If You Haven't Got the Gas.

Here Is An

Absolutely Perfect Generator



Not another Generator on the market constructed on correct principles.

This one is strictly automatic. Gas always on tap. You may use all the gas on one long or a dozen short trips and there is no waste.

Waste lime delivered as a dry dust. Uses cheap commercial lump carbide. Guaranteed to give perfect satisfaction under all conditions. The only safe Generator for the Lens Mirror Searchlight.

Price \$15

Send for catalog of the Lens Mirror Searchlight and the new Generator Book.

PATENTED

RUSHMORE DYNAMO WORKS, Plainfield, N. J.

Motor Car Supply Co., Chicago Agents.

New York Salesroom, 1964 Broadway.

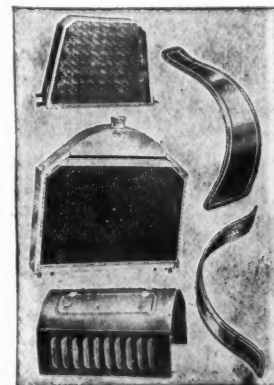
A POSTAL CARD WILL BRING OUR HANDSOMELY ILLUSTRATED

New Catalog of Radiators, Hoods, Etc.

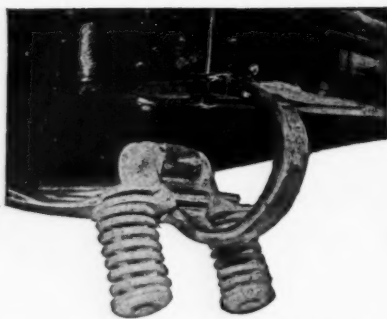
This catalog contains much instructive matter for both expert and layman. Handsome illustrations of the types of radiators, hoods, fenders, etc., that will prove most popular this season in both foreign and the highest class of American cars. We supplied over 7-10ths of the machines built in 1903 and are in line for even a larger proportion for 1904. Send for Catalog A. C.

OUR EXHIBIT WILL BE IN BOOTH 159, NEW YORK 210, CHICAGO 32, DETROIT .. SHOW

BRISCOE MFG. CO., Detroit, Mich.



**Would
You?
Would
I?**



Oakland, Cal., 27th Oct., 1903.

The Graham Co.,
Park Sq. Auto Station,
Boston, Mass.

Dear Sirs: I notice your "ad" of the GRAHAM Supplementary Spiral Springs, and as I am tired of paying for broken leaf springs for my touring car I will try your springs which you will ship to me by Wells-Fargo, C.O.D., with full instructions to apply the same.

Yours truly,

This is the regular thing by every mail.

WOULD I?

THE GRAHAM CO.

41 Columbus Ave., BOSTON, MASS., U. S. A.

"Keep Us In Mind"



**Our Hood
Department**

is the

"Biggest Ever"

We Make What You Want and
MAKE IT RIGHT.

A nicely made hood adds very much to the appearance of an auto. Don't buy **cheap** hoods as they make your autos look **cheap**. Let us talk with you for 1904. You will regret it if you wait too long. **First Come, First Served.** Several have already specified.

Metal Bodies
Hoods
Fenders
Radiators
Metal Tonneaus
Metal Seats

The Wilson & Hayes Mfg. Co.

46-50 Guard Street, Cleveland, Ohio.

"On Time"

Trains in the South
are those that run
via

**Seaboard
Air Line Railway**

People along the line who have no clocks, set the time for meals by Seaboard trains and never have indigestion from irregularity. The Seaboard is the line to the Land of Manatee below the frost line in Florida, and is the short line to the famous Winter Resort Region of the Carolinas, Georgia and Florida.

For good reading on the subject, address

Edward F. Gost,
Traffic Manager,
PORTSMOUTH, VA.

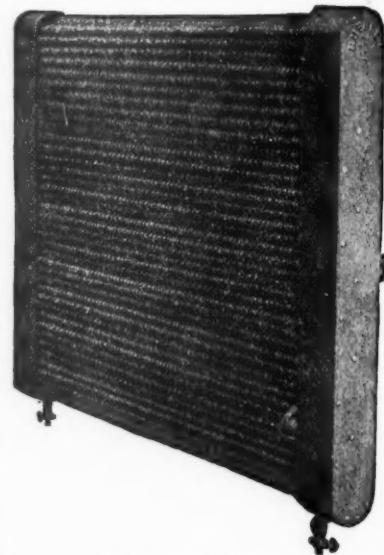
Charles B. Ryan,
Gen'l Pass. Agt.,
PORTSMOUTH, VA.

**Kerosene
Burners and
Condensers**

Part of our ideal flash steam generating equipment for the coming season.

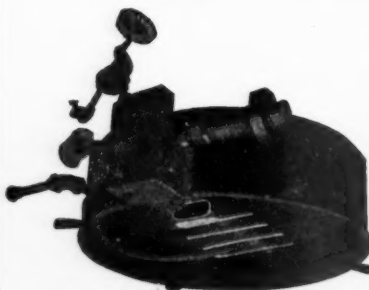
Sold separately when wanted.

Write for our new catalogue, which will be out January 1st.



Burnell Condenser.
Takes Care 100 per cent of Steam.

We will Show at New York and Chicago



1904 "Burnell" Kerosene Burner

Our new "Burnell" Condenser condenses 100 per cent of the steam. Give us a call at the Shows. We will explain how we do it.

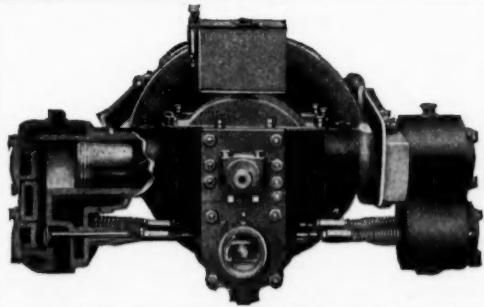
**The BARTON BOILER
COMPANY,** SOLE MANUFACTURERS,

OFFICE AND FACTORY

4212-4230 State St., Chicago,
U. S. A.

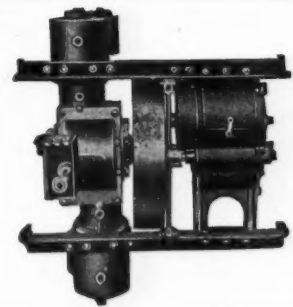
PHONES OAKLAND 1540-1.

"MODEL" ENGINE AND TRANSMISSION



INTERESTING FEATURES:

Double opposed cylinder. Every bearing of brass or roller. Every bearing adjustable. No replacing of bushings. Steel forged connecting rods and crank shaft. No cylinder heads of packing joints communicating with water space. Extremely large water jacket surrounding valves as well as cylinder. Unusually large valves with small lift. Valves to each cylinder operated with same cam. Pistons, connecting rods and other parts can be removed without interfering with other parts of the engine. All working parts in both engine and transmission in oil tight case. Force feed lubrication. Five-speed transmission. Steel and brass gears with aluminum case. Weight of 12 H. P. engine and transmission complete, 325 pounds. Weight of 16 H. P. engine and transmission complete, 375 pounds. Power considered, lightest engine and transmission on the market.



For further particulars address,

MODEL GAS ENGINE CO., Auburn, Ind.

Salisbury Improved Artillery Wood Wheels



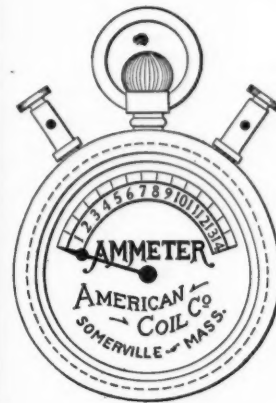
Our new plant with capacity of 200 wheels per day, all new machinery and expert mechanics, assures you a true wheel, perfect in every respect, latest in design and prompt delivery. We answer your correspondence at once.

Salisbury Wheel & Mfg. Co.

New Location:
4 Tiffany Ave.

JAMESTOWN, N. Y.

Notice Ribs on Flanges.
Protected by letters patent.



Every operator of an Automobile, Motor Cycle, or Launch should own one of our

AMERICAN POCKET AMMETERS

For testing dry cells. The only RELIABLE pocket ammeter on the market. Lasts a lifetime.

AMERICAN COIL COMPANY
WEST SOMERVILLE, MASS.

AUTOMOBILE AXLES COMPLETE

With Hyatt Roller Bearings

ARTILLERY AND WIRE **WHEELS** For Any Weight Vehicle

ALL SIZES **RIMS** FOR ANY TIRE

Every Clincher Rim is **INSPECTED** by Clincher Tire Association, bears their approval stamp and ONLY on such rims will tires be guaranteed.

WESTON-MOTT CO., - - Utica, N. Y.
Established 1884.

THE COURIER

BUILT FOR AMERICAN ROADS



MUD, Sand and Hills shrink before it. A Model of Simplicity. Quiet, Safe, Powerful & Economical.

More power per pound than any other car on the market. Cylinder 4 1/2 x 6. The only Runabout on the market equipped with Sliding Gear Transmission.

Will run all day without adjusting. Agents wanted.

Write for prices and Catalogue.

SANDUSKY AUTOMOBILE CO. 1108 Camp Street, SANDUSKY, OHIO.

MOTORS

Write for Catalogue

Buffalo Gasolene Motor Co., Buffalo, N. Y.

The Hussey Drop Forging & Mfg. Co.

Cleveland, - Ohio,

Manufacturers of

Steering wheels Steering knuckles
Solid, tilting and sliding Parts for running gears
Radiators, Circulating pumps Machine Forgings
Oiling devices, Drop Forgings and Magic funnel

The Rutenber Motor

More Power, Less Parts and No Vibration. Superbly Built, and of the Best Material.

THE WESTERN MOTOR CO., Logansport, Indiana.

SHELBY

SEAMLESS-STEEL-TUBING

BEST MADE FOR AUTOMOBILE CONSTRUCTION

SEND SPECIFICATIONS - WE QUOTE PRICES

SHELBY STEEL TUBE CO.

MAIN OFFICE
PITTSBURG, PENNA.

BRANCH OFFICES NEW YORK AND CHICAGO

NICKEL PLATE.

The New York, Chicago & St. Louis R.R.

THREE TRAINS DAILY

TO

**Ft. Wayne, Cleveland,
Erie, Buffalo,
New York and Boston.**

No Excess Fare on any Train on
Nickel Plate Road.

Meals in Dining Cars on
American Club Plan, from
35c. to \$1.00. Also a la
carte. : : : : : : :

DEPOT:

La Salle St. Station, Chicago.
City Ticket Office, 111 Adams St.

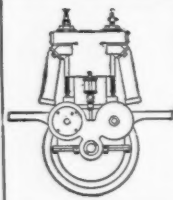
John Y. Calahan, General Agent,
113 Adams Street.

Phone Central 2057 CHICAGO.

AUTOMOBILE BODIES



THE
Frantz Body Mfg. Co.
AKRON, OHIO



Equal to the very latest French
productions—Up-to-date En-
gines and Transmission
Gears. Air-cooled and Water-
cooled Motors. Air-cooled mo-
tors, 1 to 3 cylinders, 2 to 15 h.
p. Water-cooled Motors, 2 to 8
cylinders 10 to 40 h. p.

Trebert Gas Engine Co.

160 Main St. W., Rochester, N.Y.
Brandenburg Bros. & Alliger,
selling ag'ts, 103 Reade St., N.
Y., 85 Lake St., Chicago.

Transmission Gears Sliding Gears Connecting Clutches

COLCORD UPTON,

Office: 144 W. 39th St., NEW YORK CITY



THE SIMPLEX MULTIPLEX SYSTEM
OF CORRECT LUBRICATION

THE
AUTOMATIC LUBRICATOR
COMPANY

1134 Carlton Building CHICAGO

Porcelain Cracks

We use Indestructible STONE.

The BOUGIE HERZ is guar-
anteed proof against CAR-
BON and OIL. It's the
Standard of the World.

It always pays to take the best.

Write for our GOLD BOOK.

HERZ & CO.,

55 Grand St., New York.

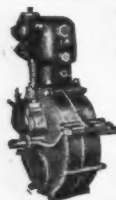


Evinrude Motors

with 3 speeds and reverse, new type
planetary gear. 7 H. P. single, 14
H. P. double cylinder. Finest work-
manship and finish.

Prompt Deliveries, Prices Right.

Motor Car Power Equipment Co.
279 Grove St., MILWAUKEE, WIS.



ALUMINUM

Aluminum

Automobile

Parts a Specialty

The Pittsburgh Reduction Company,
Pittsburgh, Pa.

WHEN MIXED WITH

Polar Non-Freezing Compound

WATER WON'T FREEZE

Non-corrosive. Fluid at zero. Will
not crystallize or evaporate. Five gal-
lons in wood-jacketed can, \$1.50.

AUTO ACCESSORIES CO.

501 Citizens Bldg., Box 153, Cleveland, Ohio

SEE OUR

Classified Advertisements

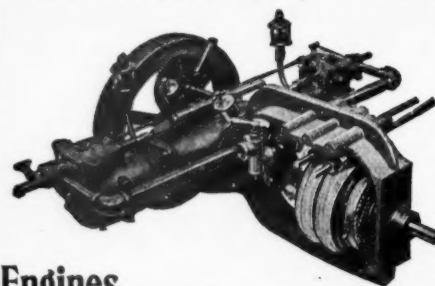
ON LAST PAGE

They Produce Results

Parties who patronize those
columns once invariably come
again. Results is what they
want. A better sales medium
cannot be found than a care-
fully worded classified ad. in

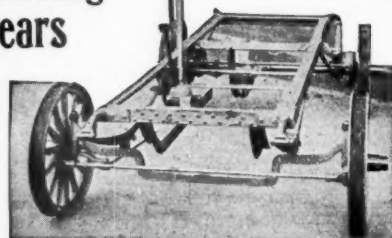
MOTOR AGE.

The expense is nominal. 3
cents per word for first in-
sertion and 2 cents for each
subsequent insertion.



Engines and Running Gears

are our specialties
though we manufac-
ture many other auto-
mobile parts.
Our new catalogue
free on application.



Neustadt-Perry Co. 826-830 S. Eighteenth Street
ST. LOUIS, MO.

CHAS. T. HOWE & CO., Export Agents, 51 Hudson St., NEW YORK

ERA IN JACK MAKING SEARLS'



Folding Auto and Carriage Jacks

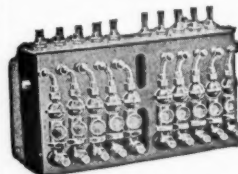
Remodeled, improved. To range
from 8 1/2 inches high up to highest
carriage wheels. Not equaled
by all others on earth **bunched.**

Send for Catalogue.

First Balcony North, 4th Avenue, Jan. 18th
to 23d, Madison Square Garden.

JERSEY BRAKE CO., Newark, N. J.

Please mention Motor Age.



MACHINE LUBRICATION

Obtains Ideal Results.
Manufacturers Send for
Estimates.

JOHN F. McCANNA CO.

McCORD & CO., Lessees,
Old Colony Bldg., CHICAGO.

Kelecom Motors Autolyte Gas Lamps Automobile Horns

Send for Catalogue and Prices.

A. H. FUNKE, 325 Broadway, N. Y.

GEO. COOPER & CO.

CLEVELAND, OHIO

AUTOMOBILE SPRINGS

Oil Tempered and
Hand Fitted

Herz Oscillum



Will make any spark plug
spark. Money refunded
if not satisfactory.

Send 50 cents for one today.

EMIL GROSSMAN,

Dept. M.,

298 Broadway, New York.

SPRINGS

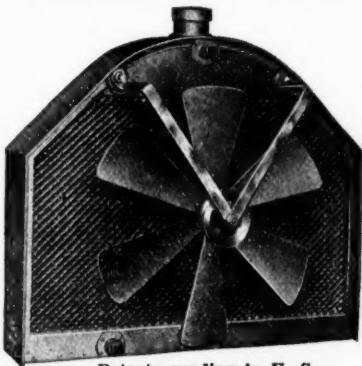
OIL TEMPERED. HAND FITTED.



ALL KINDS FOR AUTOMOBILES

THE CLEVELAND-CANTON SPRING CO., Canton, Ohio

Whitlock Cellular Coolers



Are the Standard.
Made in All Sizes.

Before placing contracts for 1904 do not fail to inquire what kind of a record the Whitlock Cellular Cooler has made during the past summer.

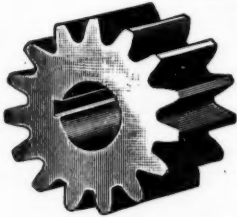
We also make a specialty of
High Grade Disc Radiators.

The Whitlock Coil Pipe Co.
HARTFORD, CONN.

Patents pending in U. S.
Patented in England, Belgium and France

Gears for Automobiles

Spur Gears, Bevel Gears, Spiral Gears, Worms and
Worm Gears, Internal Gears.



Internal Gears require only 3-16
inch space between Gear
and Web.

If you want perfect Gears send them to
us. Estimates cheerfully furnished
on receipt of specifications.

F. H. BULTMAN & CO.

106 & 108 Canal Street, :: CLEVELAND, OHIO.

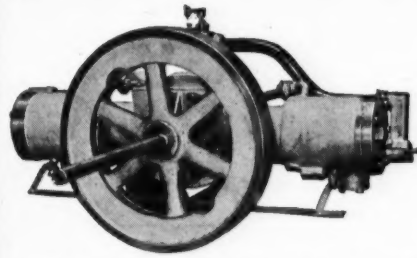
The Premier

Luxurious in Appearance,
The Best for Service,
Least Expensive to Maintain :: ::



Made by

PREMIER MOTOR MFG. CO., Indianapolis, Ind.



THE BUCKEYE

Horizontal, Two-Cylinder
Opposed

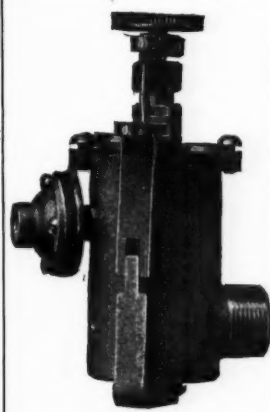
MOTOR

12 H. P.

THE Two-Cylinder Motor shown has been designed for automobile work. The cylinders are 4 1/2 x 5, and are each cast in one piece, there being no gaskets between explosion chamber and water jacket; but ample means are provided to clean out any deposit forming in water jacket space. The bearings, as will be seen, are extra long, bushed with bronze metal of the best material to be obtained. The motor is fully guaranteed as to workmanship and material.

Our specialty is motors of light weight and great power; also sliding gear transmissions. Write for prices.

THE BUCKEYE MOTOR CO., - Columbus, Ohio



WESTERFIELD CARBURETER

No complicated parts.
No float. A perfect
mixture maintained au-
tomatically for varying
speed of engine. A per-
fect throttling carbu-
reter. Write for circu-
lar and price.

WESTERFIELD MOTOR CO.

1525 Main St., ANDERSON, IND.

MOTOR AGE

Gets the News :: Get Motor Age :: \$2.00 a Year

1303 MICHIGAN AVE. - CHICAGO, ILL.

Rates \$1.50 and Upward

Facing Lake Michigan

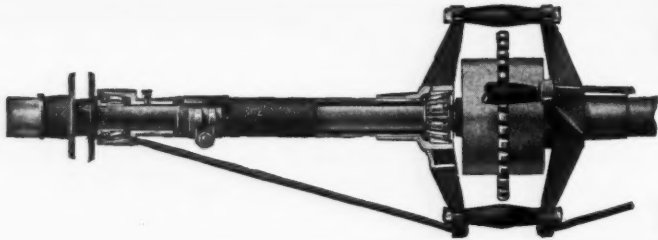
200 Rooms...125 Bath Rooms

THE STRATFORD

MICHIGAN AND JACKSON BOULEVARDS....CHICAGO, ILL.

Everything New

Handsomest Dutch Room in America...Cuisine the Best....Auto Headquarters.



Steering Knuckles Rear Axles Artillery Wheels Front Axles

Only Roller Bearing capable of taking up all wear.
Warranted for two years.

TIMKEN ROLLER BEARING AXLE CO., - - CANTON, OHIO



The

STA-RITE
"STAYS RIGHT THE LONGEST"

Spark Plug with our own construction of double porcelain, air space, self packing joint and protected point is known to stay right longer than any other plug in the world at any price.

American size, American size with shoulder, and Metric size, \$1.50. 3/4 in., Winton, Locomobile, Thomas, Autocar, and Knox, \$1.75. American size with Mica Case, \$2.00.

Get a set right away at New York or Chicago Shows, of dealers, or of

DETROIT MOTOR WORKS, - DETROIT, MICH.

KINGSTON CARBURETER



Patented May 12, 1903.
Other Patents Pending.

BYRNE, KINGSTON & CO. KOKOMO, Ind.

Gives perfect control over motor and furnishes perfect and uniform mixture at all speeds. Throttle consists of fuel needle point valve and air regulating valve, both acting together by one lever.

POWER-RESULTS



By Using my

Motors, Transmissions,
Carbureters, Plugs, Coils, etc.

Lists on Application.

8 H. P., 2 Cyl.
ALUMINUM CASE
GOVERNED.

H. P. NIELSON,
ST. JOSEPH, MO.

The Standard for Years

SOLAR LAMPS

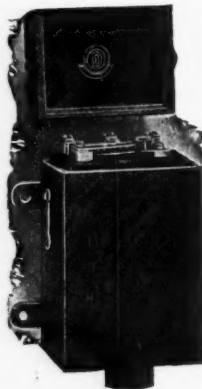
A complete line of Head, Side and Tail
Gas and Oil Lamps.

BADGER BRASS MFG. CO., Kenosha, Wis.

WILLARD STORAGE BATTERIES

IMPROVED—LIGHT WEIGHT

THE WILLARD STORAGE BATTERY CO.
CLEVELAND, OHIO



Why

hesitate in getting a coil when the DOW COIL is acknowledged to be the best coil in the market and is used on all the best machines?

Over 300 Styles
to select from.

Write for catalogue to

Dow Portable Electric Co.
BRAINTREE, MASS.

Chicago Agents: THE P. J. DASEY CO., 19 La Salle Street

BARGAINS

WRITE FOR BARGAIN LIST
THE MOTOR CAR SUPPLY CO.
1427 Michigan Ave., CHICAGO

SUPPLIES

Automotor Tonneau

Ideal Gasoline Car for City and Country
Use. Write for 1903 Catalog and Prices.

The Automotor Company
SPRINGFIELD, MASS.

IF YOU WANT CATALOGS

of any of the advertisers
write a line to us enclosing
stamps to cover postage

MOTOR AGE

1303 Michigan Avenue.....CHICAGO

THE ROBERTS LABORATORY

is equipped for

Testing Automobiles or Gas Engines

and for

Gas and Petroleum Analysis

I design engines or complete vehicles and can build your first machine if you wish. Tests made anywhere.

E. W. ROBERTS, M. E.
Consulting Automobile Expert
Box 323 - - - CLYDE, OHIO

E. J. AUTOLIGHT \$7.50

WITH GENERATOR \$15.00

gives as powerful a light as any lamp made. Burns for 8 hours.

E. J. SPARK GAP 50c.

Points enclosed in glass tube.

E. J. WILLIS, 8 Park Place, NEW YORK.

STEARNS CARS

are things of beauty and joys forever

ASK FOR CATALOGUE

THE F. B. STEARNS CO.

Euclid Ave. & N. P. Tracks CLEVELAND, OHIO, U. S. A.

Eclipse Pocket Ammeter

for general battery testing, 0 to 15 amperes. Soft-Iron Solenoid type. Ready to use, with flexible cord attached and contact spur in case, which is drawn back into case, when carried in pocket. The contacts, on both cord and case, are made of non-corrosive metal. Size of watch and very light weight. Pivots hardened and polished. Well finished throughout, can be used in any position. Particularly designed for Auto use.



Eldredge Electric Mfg. Co. 227 Main St. Springfield, Mass.

NO matter what make of Automobile you have you will find some one of Dixon's Graphite Lubricants invaluable. Send for Booklet 82-g.

Joseph Dixon Crucible Co. Jersey City, N. J.
Member of Nat'l Ass'n of Automobile Mfrs.

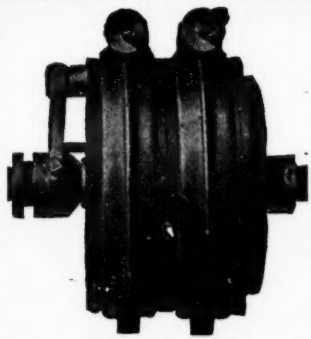
ATWOOD "STAY-LIT" LAMPS ARE THE BEST

ATWOOD MFG. CO., Makers
Send for Catalogue. Amesbury, Mass.

LAMINATED WOOD BODIES=SEATS=MUD GUARDS

Let Us Quote You Prices on These Goods.

THE AUTO BODY CO., LANSING, MICH., U. S. A.



The Ball Transmission Gear for Automobiles and Launches

Patented April 9, 1901. Other Patents pending

Two Forward Speeds and a Reverse.
Made entirely of Spur Gears cut
from Steel Blanks with Hardened
Teeth, Running in Oil.
No Internal or Bevel Gears.

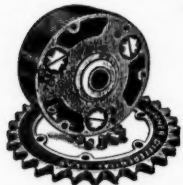
NEW YORK GEAR WORKS

58 Greenpoint Ave., BROOKLYN, N. Y.

Western Agents: NEUSTADT-PERRY CO., St. Louis, Mo.



Positive
Circulating Pump.
Brass or Aluminum



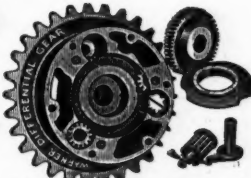
Warner Spur Differentials

"READY FOR DELIVERY"

NOT AS GOOD BUT BETTER

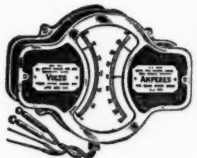
This Is Guaranteed. 4 Sizes, in Both Sprocket and Bevel Gear Drive.

Warner Gear Company,
MUNCIE, IND.



Patented in U. S. and Foreign Countries.

Patented in U. S. and Foreign Countries.



Combination Volt and
Ammeter, Model R.

WESTON ELECTRICAL INSTRUMENT CO., Electrical Measuring Instruments,

FOR USE IN
Electrical Carriages and in Charging Stations
Send for Catalogue.

WORKS: - Waverly Park, NEWARK, N. J.

New York Office, 74 CORTLANDT ST.



Switchboard Ins't Type K.

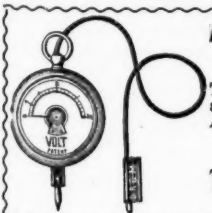


Going to Ride? For Pleasure? How can you
enjoy it while in constant
fear of collapsed tires?
On Business? Time is money, and you want no mishap
on the way. **The Tennant Pneumatic Puncture-
Proof Tire** on your auto guarantees both pleasure
and safety. It can neither be punctured nor deflated
by cracking or breaking of the inner tube. Our free
catalogue, sent on request, tells all about it.

Tennant Auto Tire Co.

(Dept. D.) Springfield, Ohio

See our exhibit at New York and Chicago Shows.



POCKET VOLT or AMMETER

The handiest, most accurate
and reliable in the market.
Any voltage, any amperage.

Send for Catalogue M.

Talmon Electric Eng. Co.,
150 Nassau St., New York, N. Y.

FRENCH

Lamps, Horns, Goggles, Spark Plugs,
Pumps, Oilers and Grease Cups.....

The Finest of Everything.
EMIL GROSSMAN,

EXCLUSIVE IMPORTER,

Dept. M. 298 Broadway, New York.

THE DAVIS "Air-Tight Bag" Lap Robe



PATENT PENDING.

For ladies or gentlemen. Absolu-
tely Cold, Wind and Water
Proof. Made of fine heavy
plush and rubber, leather shod.
Is "smart" and comfortable.
Adjustable to fit anybody. In-
stantly put on or off. Held
to place with large glove fast-
eners. You can perfectly op-
erate your car through this
"bag," or use

**The Davis Air-Tight
ARCTIC "Over Pants"**
made of the same material as
the Standard robe, to cover the
feet, legs, and lower half of the
overcoat. Are Wind, Cold
and Water Proof. Enable
you to walk about unhampered
into zero snow or mud and
water. Always warm and dry,
while their commodious
form and adjustable fastenings
permit you to

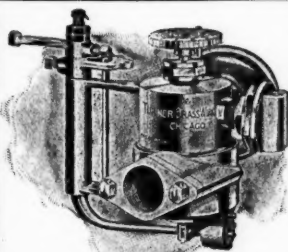
Put Them On Or Off in
Five Seconds.

through the leather soles of which you can "feel" the most
sensitive throttle or "slam in" the most powerful brake.
They're a necessity for ten months of the year.

Prices: Send waist measure and height. Robe: Stand-
ard, \$7.50; "Baby Bear" fur front (elaborate), \$15; Arctic
"Over Pants," \$10. F. O. B. Chicago. Cash or C. O. D.
on approval.

The Davis Robe Co., Inc., 1307-10 Champlain Bldg.

The Turner Carburetor



Places the
entire control
of a motor un-
der one lever
and gives
more speed
and power than
any other device
on the market

Write for our new
Booklet which
tells why.

Brandenburg Bros. & Altiger, New York and Chicago Sales Agents
The Turner Brass Works, 59 Michigan St. CHICAGO

CHICAGO AUTO AGENCIES

HENRY J. ULLMANN

Temporary Address: 1602 MICHIGAN AVE.
Chicago Agent for

White Touring Cars ABSOLUTELY NOISELESS

Secure a Demonstration.

DAN CANARY AUTOMOBILE CO.

521 TO 531 WABASH AVENUE

Largest and Best Equipped Salesroom
and Garage in Chicago

Agents for the SANTOS-DUMONT

PARDEE & COMPANY

1404-1406 Michigan Boulevard

Distributors
of
Guaranteed
Automobiles

PACKARD
BAKER
YALE
AMERICAN
CENTAUR

"ASK THE MAN WHO OWNS ONE."

Tel. South 366

FRANK P. ILLSLEY Automobiles

1421 Michigan Av.,

Distributor for
"THE PEERLESS"

Chicago

H. G. GRIFFIN Central Automobile Station

17 PLYMOUTH PLACE

AGENT FOR THE SANDUSKY

Renting, Storage and Repairing. Experts in Charge.
Positively no Holdup.

Telephone, 3038 Harrison

The Orlando F. Weber Co. Distributors of

"Peerless"
Automobiles

Chicago Store:
521 Wabash Av.

Milwaukee Store:
321-325 Fourth St.

NATIONAL ELECTRIC. PROMPT
CADILLAC. DELIVERIES.
STEARNS GASOLINE
CADILLAC AUTOMOBILE CO. OF ILL.
TEL SOUTH 2049. 1312 MICHIGAN AVE CHICAGO

"THE DOWN TOWN STORE"

20 LAKE STREET.

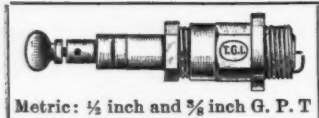
Open Day and Night. Storage by the Day or Month.
Thoroughly Equipped Machine Shop. Only one in
the city devoted to Automobile Work.

The "Premier"—16-20-40 H. P.

ARTHUR G. BENNETT

BENZ & CO. MANNHEIM, GERMANY
ESTABLISHED IN 1893
THE OLDEST AUTOMOBILE MAKERS IN THE WORLD
FIRST CAR PATENTED JANUARY 29, 1886
OVER 4,000 NOW IN SUCCESSFUL OPERATION
Prices, \$3,500 to \$15,000
ALL CARS IMPORTED COMPLETE (LESS TIRES)
IMMEDIATE DELIVERY EXCLUSIVE AGENTS FOR U. S.
MEAD CYCLE CO., CHICAGO

T.G.I. Spark Plug



Metric: 1/2 inch and 3/8 inch G. P. T

The T. G. I. Spark Plug is not "Soot-proof," nor Unbreakable, but is used in preference to others in thousands of Automobiles in this country, because it gives the most uniformly satisfactory results. Immediate deliveries in any quantities.

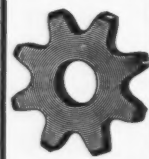
TORBENSEN GEAR,
Incorporated,
Bloomfield, N. J.



The Smile that Won't Come Off
is worn by the man who reads Dr. Dyke's
Book on "The Diseases of a Gasoline
Auto and How to Cure Them."

Price \$1.50.

A. L. Dyke Auto Supply Co.
2108 Olive St., - St. Louis, Mo.



Automobile Sprockets
Carried in stock and made to your order.
Close quotations in quantities.
Write for our New Catalogue.

CULLMAN WHEEL CO.
521-525 Larrabee St., - CHICAGO.



SEE OUR AD IN
THIS ISSUE

Booklet on application

THE BULLOCK-BERESFORD MFG. CO., Cleveland

The P. J. DASEY CO.

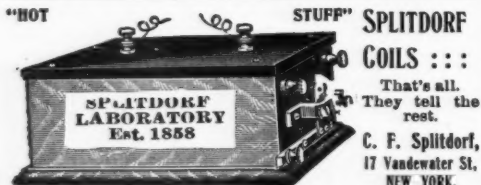
19 LaSalle Street. - CHICAGO, ILL.

We furnish everything necessary to build an automobile including motors 5 to 20 H. P. Send stamp for our catalogue of supplies.

Indian Motocycles

New York Show
Space 144.
Chicago Show
Space 235.

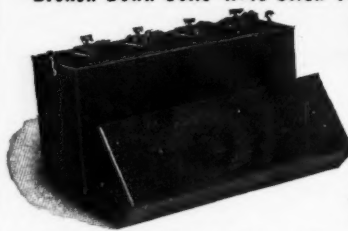
HENDEE MFG. CO.
SPRINGFIELD, MASS.



GRAY & DAVIS
AMESBURY, - MASS.

Makers of Good
AUTOMOBILE LAMPS
Send for Catalog

Broken Down Coils Have Given You Trouble.



After trying the rest, try the

BEST
We make all types and all sizes. Never had a coil break down. Our literature on jump spark ignition is interesting. Yours for the asking.

The Induction Coil Co.
Room 9, Miller Bldg., Milwaukee, Wis.
R. E. HARDY, East'n Sales Agt., 26 Cortland St., N.Y.
NEUSTADT-PERRY CO., 826 S. 18th St., St. Louis, Mo.
CHICAGO OFFICE, 435 Wabash Avenue.
R. L. McQUAT, 125 S. Meridian St., Indianapolis, Ind.
F. BISSELL CO., Toledo, Ohio.

Kent Pocket Battery Meters



The Automatic Volt-Ammeter is designed and calibrated especially for testing batteries in connection with gasoline automobiles and launches. The needle is delicately pivoted, and the readings are accurate. No change is made in the connection to the battery for the two readings, as that in amperes is obtained by simply pressing the button. The most convenient and complete battery tester on the market. Price of Automatic Volt Ammeter, \$6.00; price of Ampere Meter, \$5.00. Special scales made to order.
ATWATER KENT MFG. WORKS, 116 N. 6th St., Philadelphia.

MISCELLANEOUS.

ADVERTISEMENTS under this head 3 cents per word first insertion; 2 cents per word each insertion thereafter. Cash with order. Express orders, postoffice orders or stamps received.

FOR SALE—Automobiles and parts.
Two piano box electric runabouts new...\$550.00
One electric runabout with top, new..... 650.00
One second hand electric runabout in first class condition 400.00
One second hand steam in first class condition 250.00
One K. W. charging dynamo, new..... 200.00
One 32 Ampere charging dynamo..... 75.00
Two 1 1/2 horsepower motors 100.00
Three volt Ammeters 30.00
Four charging Rheostats 12.00
Each of the above is in first class condition, and will be shipped f. o. b. upon receipt of price. Our catalogue on the new gasoline machine will be out in a short time, and we would like to hear from some good agents. We do all kinds of specialty work. Towanda Motor Vehicle Co., Towanda, Pa.

FOR SALE—One Toledo 4-passenger steam touring car, 1903 model, with condenser, gas lamps, fenders and automatic oiler attached; run 75 miles; cost \$1,800; will take \$850. Also, 1903 long distance National electric auto, 100 mile battery, 36 cells, tonneau style body, cost new \$1,750, run 250 miles. Charging apparatus costing \$350. Car and charging outfit \$1,000. Cause of selling, ill-health. James Mills, Newark, Ohio.

FOR SALE—1903 Winton touring car, newly varnished; machine in fine condition. For quick sale.....\$1,800.00
1903 Knox without top..... 850.00
1903 Cadillac runabout 525.00
1903 Cadillac with tonneau 600.00
1903 Autocar complete, newly painted... 1,200.00
These machines are all in first class shape and big bargains. Pence Automobile Co., Minneapolis, Minn.

FOR SALE—Mobile, 4 passenger, steamer, or would trade for light gasoline car. H. E. Lucia, Oconto, Wis.

FOR SALE—Thomas motor bicycle, excellent condition: two inch Dunlop tires, \$40. Clarence Stone, Stroudsburg, Pa.

FOR SALE—One 1903 Knoxmobile, run 500 miles, \$950.00. One 1902 Knoxmobile, repainted, cylinder rebored, all worn parts replaced new; \$675.00. One 1903 Oldsmobile, single tube tires, wire wheels, \$550.00. One 1902 Oldsmobile with all 1903 improvements, wood wheels, Dunlop tires, used as sample last year, \$475.00. Full particulars and photos. Gregory & Co., Fresno, Calif.

FOR SALE—Orient runabout, 1903 model, 8 horse power, French De Dion motor; used for demonstrating purposes; has had the best of care and is in first class condition; cost \$875.00; must be sold before the opening of the N. Y. show, the first check for \$495.00 takes it; want to purchase larger car at show. Emil Roemer, Webster, Mass.

FOR SALE—One 1903 Winton, in first class condition, new last June, with \$135.00 worth of extras. Price \$1,800.00. Also five 1903 Oldsmobiles at a bargain. St. Paul Motor Vehicle Co., St. Paul, Minn.

FOR SALE—New White steam car, all improvements, in perfect working order, used only four months. Price reasonable. Demonstration of car be made any time. Address 124 W. Larned St., Detroit, Mich.

FOR SALE—Automobile plant; buildings in fine condition; over 20,000 square feet floor space, all on one floor; new machinery; cheap electric power; railroad switch and canal adjoin; factory now running; several machines completed. Need more capital; will sell cheap. A. J. Baechle, Utica, N. Y.

FOR SALE—1903 White touring car. Perfect condition. Used very little. Side baskets. Side and rear oil lamps and two large acetylene head lights. Tires never punctured. Owner wants 1904 car, same make. Address R. L. Robinson, 44 Kent St., Akron, O.

FOR SALE—Second hand steam, gasoline and electric automobiles. The largest variety under one roof in America. Send 5c in stamps for catalogue. Mississippi Valley Automobile Co., 3935-39 Olive St., St. Louis, Mo.

FOR SALE—Packard gasoline automobile, model C; 12 h. p.; dos-a-dos seat, new top and box for luggage. A1 condition. Cost \$1,800; a bargain at \$650, if sold at once. Bentley the Optician, 433 Main St., Springfield, Mass.

FOR SALE—Three 1903 Winton touring cars for \$1,800.00 each. Absolutely like new throughout, with baskets, head and tail lights and extra tubes. All newly varnished. L. W. Welch, Grand Rapids, Mich.

FOR SALE—1903 Winton touring car; practically new G. & J. tires; 2 large Rushmore lamps; touring baskets. Guaranteed in first class shape; \$2,000. Earl Fisher, 23 E. Ohio St., Indianapolis, Ind.

FOR SALE—Having discontinued the building of complete automobiles, we have for sale cheap a lot of bodies, axles, engine castings, etc. Send for list. Russell Mfg. Co., Indianapolis, Ind.

FOR SALE—Specially built 1903 Locomobile steam touring car. Will be delivered from Locomobile factory almost as good as new. Half price. Dow R. Beebe, Bridgeport, Conn.

FOR SALE—Two Ramblers, model C; brand new, never used; only a floor samples. To make room for 1904 goods, will quote \$425.00 if sold at once. Address J. K., Motor Age.

FOR SALE—1903 Haynes-Apperson runabout, 8 H. P. A perfect machine, bought last October; color, dark red and gold trimming. M. S., 355 Central, Newark, N. J.

FOR SALE—A list of names of every automobile owner in Chicago, consisting of nearly 2,000; will be furnished for \$5. Address C., Motor Age.

FOR SALE—Up to date steam dos-a-dos; a bargain. Address J. F., Motor Age.

WANTED—Second hand steam automobile. Box 444, Berlin, Ont., Canada.

Agency in New York

WANTED—For a light runabout, by an old established reliable concern located in the heart of the Automobile district.

Apply in first instance, J., MOTOR AGE, 134 W. 38th street, New York.

QUINBY
AUTOMOBILE-BODY
DEPARTMENT
513 SEVENTH AVENUE, N.Y.
EMERSON BROOKS, MANAGER.
PHONE 6945-36TH ST.

Mechanical Engineer, Automobile Expert

JOHN C. HIGDON, Asso. Am. Soc. M. E.
Twenty-five years' experience. Eight in Auto Building.
Have designed many successful Engines and Autos complete. Write me for advice on your hard problems.
REFERENCES FIRST CLASS.
To Buyers: Ask me to name the best car for a given price. Am not biased in favor of St. Louis or any other builders. Address: 605 Mo. Trust Bldg., St. Louis, Mo.

THE
Acknowledged Standard
Electric Vehicles
New York Office
POSTAL TELEGRAPH BLDG.

SPECIFY
SPERRY

BATTERY
Reliable Sparkers
Gasoline Cars
National Battery Co.
BUFFALO, N.Y.

Retrospective.

In 1903 the notable endurance runs, the successful trans-continental trips, the long distance speed records and the fastest miles on circular or oval tracks were made on

Goodrich Clincher Tires

These were tests of the severest sort and tell the story of a successful tire.

Prospective.

In 1904 we guarantee that same full measure of reliability, and feel sure that whoever uses

The Original American Clinchers

will find them the biggest help towards complete automobile contentment.

THE B. F. GOODRICH COMPANY

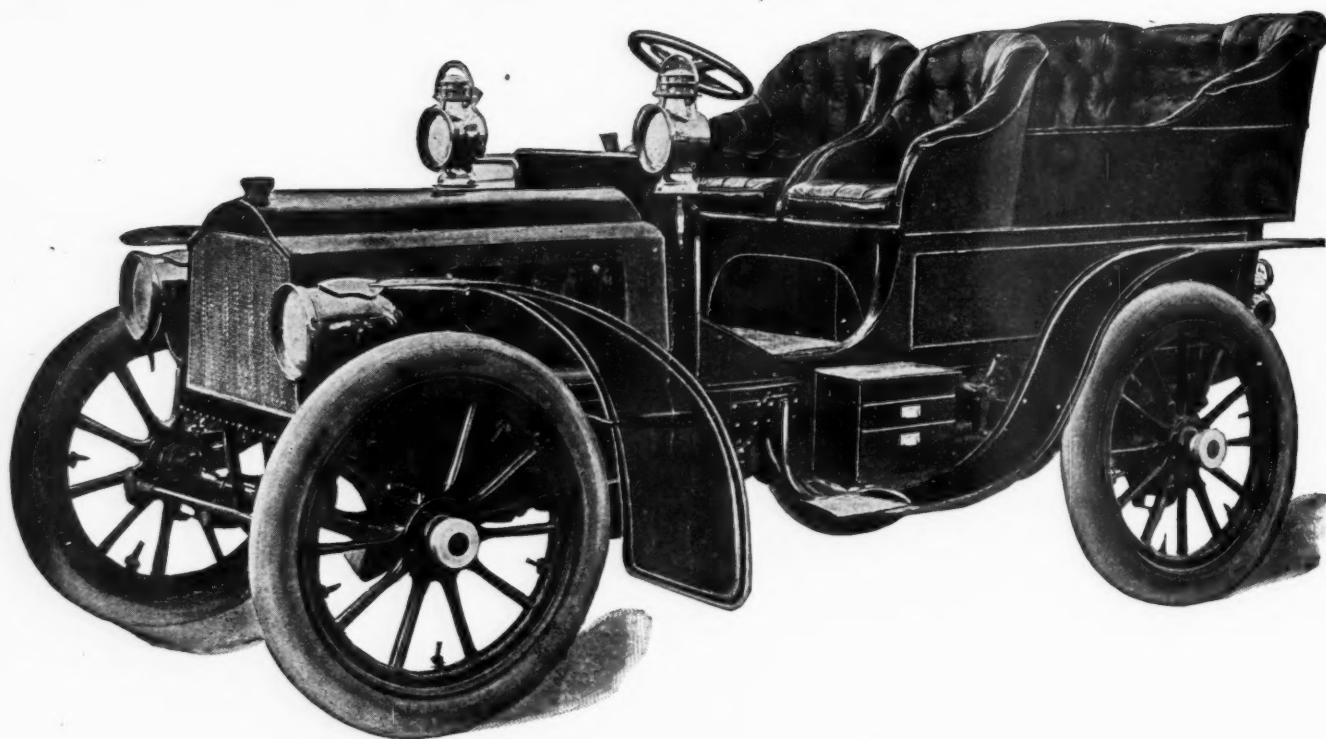
AKRON RUBBER WORKS....AKRON, OHIO.

NEW YORK, 66-68 Reade St. & 1625 Broadway
PHILADELPHIA, 922 Arch Street
DETROIT, 80 E. Congress Street

BOSTON, 157 Summer Street
BUFFALO, 9 W. Huron Street
LONDON, E. C., 7 Snow Hill

CHICAGO, 141 Lake Street
SAN FRANCISCO, 392 Mission Street
DENVER, 1444 Curtis Street

PACKARD



MODEL "L" 1904

22 Horse Power. Weight 1870 lbs.

The wonderful strength, power and speed of the PACKARD are particularly remarkable when the simplicity and comparative light weight of the machine are considered.

Actual 22 horse power, with only 85 pounds of loaded weight to each horse power.

Mechanical valves for intake and exhaust; upon high speed, every available ounce of motive power is transmitted directly to the driving wheels, and with ball bearing axles all friction is done away with, greatly increasing speed and reducing wear to a minimum.

Speed of 4 to 40 miles per hour, controlled without removing hands from the steering wheel or changing gear.

Graceful in design, luxuriously upholstered and finely finished, runs without noise or vibration — a car in a class by itself and with a clientele distinctly its own.

\$3,000⁰⁰₀₀

Send for illustrated descriptive literature and name of nearest agent.

PACKARD MOTOR CAR CO.

Member Association of Licensed Automobile Manufacturers

Dept. 3. Detroit, Mich., U. S. A.